

HEALTH DEPARTMENT.



REPORT

ON THE HEALTH OF THE

CITY OF LIVERPOOL

DURING

1902

BY THE

MEDICAL OFFICER OF HEALTH.



12-11-88



With the Medical Officer of Health's Compliments.

*Municipal Buildings,
Liverpool.*

HEALTH DEPARTMENT.

REPORT

ON THE HEALTH OF THE

CITY OF LIVERPOOL

DURING

1902

BY

E. W. HOPE, M.D., D.Sc.,

Medical Officer of Health.




(Ordered by the Health Committee to be printed 14th May, 1903).

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APPENDIX.

Local Government Board Tables of Population, Births, Deaths and Infectious Sickness.

Plan-Map showing Birth Rate in Districts of City.

„ „ Death Rate „ „

„ „ Number of Deaths of Infants under one year out of every 1000 born.

„ „ Density of Population in Districts of City.

Diagram illustrating Death Rate since 1861.

Tables of Total Deaths registered in the City.

Map indicating Districts referred to in Report.

„ „ Situation of City Infectious Hospitals, Disinfecting Stations, Destructors, &c.

PREFACE.

By the inclusion of Garston the area of the City has been extended to a total of 14,909 acres, or slightly more than 23 square miles. The population, as estimated at the middle of the year was 710,337.

The birth-rate for the whole City was 34·2 per 1,000 per annum; it ranged from 19 in the Sefton Park district, up to 42 in the Scotland district.

The rate of mortality for the whole City was 21·6, ranging from 12·6 per thousand in the Sefton Park district, up to 34·6 in the Exchange district. The high rate in the latter district is partly owing to the presence of numbers of common lodging-houses, the resort of tramps and waifs from all parts.

As in former years, a large number of people from all parts of the surrounding districts have sought relief in Liverpool Institutions devoted to the treatment of the sick, and upwards of 600 of these have died in these Institutions, their deaths adding to the rate of mortality in the City.

It is interesting also to notice that the number of persons dying in public institutions in Liverpool is greater than in any of the other large towns, such as Manchester, Leeds, Birmingham, &c., a fact which implies a larger amount of poverty than exists in those places.

Some valuable statistical tables have been obtained from the Registrar-General relating to the age and sex distribution in the different districts of the City, and these will repay a careful examination.

Improvements in the methods of scavenging and removal of domestic refuse continue; the use of improved ashbins has markedly improved the conditions of the localities in which they have been placed. The condition of the streets in regard to cleanliness beyond any question is better than it hitherto has been; no doubt this is partly owing to the fact that the electric car system of transport is one which is perfectly clean so far as the streets are concerned.

Under the terms of the Factory and Workshops Act of 1901, all underground bakehouses require either to be closed or to be certified by the Sanitary Authority as suitable in all respects for the purposes of a bakehouse. As many underground bakehouses are not suitable, and cannot be made suitable, it follows that these must cease to be used as bakehouses.

There are, however, many underground bakehouses which can, by structural alterations, be adapted to meet the requirements of the Act, and in order to assist those interested in bakehouses, certain suggestions have been drawn up and circulated, indicating generally what structural alterations are necessary.

No cases of plague were imported into the City or Port during the year, but in the early months of the year (as in the preceding December) the importations of smallpox were frequent. During the first five weeks of the year, 20 cases were landed, and from time to time during the year these importations continued. Details of the consequences will be seen in the ensuing pages.

An outbreak of typhus fever, associated with the insanitary area of Hornby Street, gave rise to considerable anxiety, but the outbreak was fortunately suppressed. A reference to the outbreak will be found on page 202, and the area is one which is being dealt with by the Housing Committee.

The causes of infant mortality continue to be dealt with; it is gratifying to know that the medical staff of the Children's Infirmary, and large numbers of other medical men of experience have expressed their recognition of the benefits derived from the sale of humanised sterilised milk.

As regards consumption, detailed references to the measures directed against this disease and other forms of tuberculosis, will be found in the text. The system of voluntary notification has been continued throughout the year, and in a large number of cases the assistance of the Health Department has been sought. Many thousands of cards giving instructions to consumptive persons, and to those who live with them, have been distributed throughout the City, and enamelled plates have been fixed in suitable places requesting people to refrain from spitting on the footwalks, this disgusting and dangerous habit being now recognised as one of the common ways of spreading consumption.

Good progress has been made with regard to the provision of hospital accommodation. There are at present 925 beds for infectious diseases in the various Hospitals, but pending the completion of the general scheme already determined upon, arrangements have been made with the General Hospitals for the isolation of a certain number of cases of typhoid fever.

E. W. HOPE,

MEDICAL OFFICER OF HEALTH.

Public Health Department,

Municipal Offices,

Liverpool, *May 14th*, 1903.

CENSUS.



THE CENSUS OF 1901.

It has from time to time been pointed out that rates of mortality vary widely at different age periods, the rate of mortality in the first year of life, for example, being very much higher than in the second year of life; the rate continues to fall in succeeding years, and reaches its minimum between the ages of 10 and 15. After this the rate of mortality steadily rises with each succeeding year of age, a fact very familiar to those having experience of life insurance offices. Moreover, the rate at the different age periods is further modified by sex. It will be obvious, therefore, that the rate of mortality in a district is not only influenced by the sanitary condition of the district, but also by the age and sex of the population which inhabits it.

In preparing statistical returns, corrections are made as far as possible to meet these points; it is important to remember that the proportions of people at the various age periods in any district vary very slowly indeed, as a consequence, the mortality returns year by year relating to the same district may be put into comparison with one another, and taken as a fair index to sanitary progress; different districts, on the other hand, must not be compared with one another unless corrections for age and sex are first made.

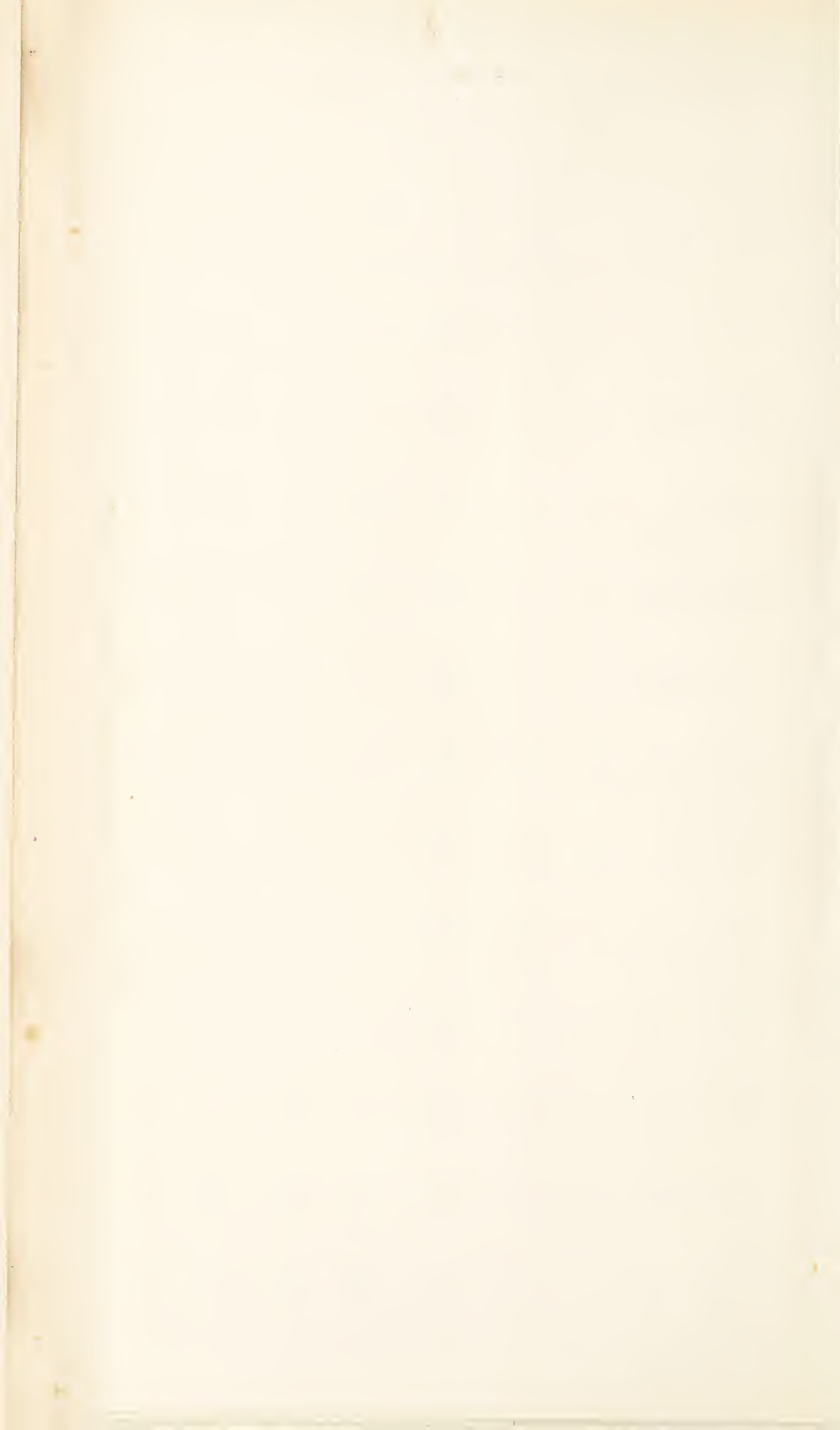
Figures are now available showing the age and sex distribution in the various civil parishes and wards in Liverpool, and the small trouble of referring to these valuable tables will be more than repaid by the information afforded.

On pages 9 and 10 an explanation will be seen of the varying rates of mortality at the different age periods in Liverpool as a whole, and the detailed census tables give the actual ages of persons, males and females, in the constituent wards of the City at the time the Census was taken.



Census 1901.—Ages of Persons, Males and Females, in the City and County Borough of Liverpool and its Constituent Wards, including Garston, 1901.

	All Ages.	Under 1 Year.	1—	2—	3—	4—	Under 5 Years.	5—	10—	13—	14—	15—	16—	17—	18—	19—	20—	21—	25—	30—	35—	40—	45—	50—	55—	60—	65—	70—	75—	80—	85—	90—	95—	100 and upwards
LIVERPOOL CITY	P. 702,247 M. 339,421 F. 362,826	19,566 9,773 9,793	16,947 8,490 8,457	16,698 8,291 8,407	16,494 8,196 8,298	16,180 8,004 8,176	85,885 42,754 43,131	75,674 37,631 38,043	42,710 21,343 21,367	13,909 6,878 7,031	14,221 7,142 7,079	13,759 6,697 7,062	14,011 6,853 7,158	13,614 6,530 7,084	14,134 6,817 7,317	13,620 6,454 7,166	14,148 6,714 7,434	56,916 26,522 30,394	65,178 30,655 34,523	54,330 25,939 28,391	47,203 22,768 24,435	40,552 20,025 20,527	33,049 16,287 16,762	27,873 13,539 14,334	20,600 9,806 10,794	18,060 8,490 9,570	10,436 4,619 5,787	6,914 2,884 4,030	3,405 1,342 2,063	1,690 542 1,058	359 139 220	69 18 51	14 2 12	4 1 3
Civil Parish, EVERTON	P. 121,469 M. 59,277 F. 62,192	3,869 1,879 1,990	3,240 1,621 1,619	3,097 1,525 1,572	3,144 1,549 1,595	3,037 1,470 1,567	16,387 8,044 8,343	14,190 7,087 7,103	7,992 4,102 3,890	2,643 1,339 1,304	2,666 1,443 1,223	2,586 1,308 1,278	2,445 1,286 1,159	2,438 1,238 1,200	2,389 1,165 1,224	2,297 1,108 1,189	2,351 1,115 1,236	9,460 4,439 5,021	10,794 5,144 5,650	8,943 4,296 4,647	7,904 3,861 4,043	6,768 3,380 3,388	5,389 2,651 2,738	4,540 2,242 2,298	3,358 1,520 1,838	2,752 1,235 1,517	1,534 636 898	943 379 564	442 165 277	209 76 133	43 17 26	5 1 4	1 ... 1	.........
Wards— BRECKFIELD	P. 25,373 M. 12,018 F. 13,355	788 388 400	680 337 343	652 324 328	656 316 340	624 297 327	3,400 1,662 1,738	2,940 1,428 1,512	1,643 792 851	556 269 287	517 260 357	511 233 278	499 226 273	459 224 235	505 252 253	444 225 219	487 229 258	1,954 884 1,070	2,443 1,151 1,292	1,987 929 1,058	1,740 853 887	1,406 694 712	1,062 502 560	887 386 501	708 313 395	515 215 300	328 143 185	199 80 119	100 39 61	67 25 42	15 4 11	1 ... 1	.........	.........
EVERTON	P. 35,616 M. 17,491 F. 18,125	978 463 515	789 363 426	766 361 405	784 398 386	774 370 404	4,091 1,955 2,136	3,787 1,877 1,910	2,253 1,187 1,066	674 353 321	812 482 330	767 417 350	754 420 334	749 399 350	714 340 374	725 334 391	722 344 378	2,848 1,362 1,486	3,130 1,493 1,637	2,580 1,222 1,358	2,379 1,153 1,226	2,137 1,053 1,084	1,769 863 906	1,541 794 747	1,147 530 617	965 466 499	524 218 306	334 141 193	143 59 84	56 21 35	14 7 7	1 1...	.........	.........
NETHERFIELD	P. 33,374 M. 16,386 F. 16,988	1,180 557 623	965 502 463	932 456 476	989 494 495	913 443 470	4,979 2,452 2,527	4,218 2,108 2,110	2,304 1,170 1,134	802 396 406	748 390 358	749 375 374	706 374 332	716 354 362	661 339 322	640 304 336	632 305 327	2,413 1,144 1,269	2,704 1,299 1,405	2,272 1,110 1,162	2,118 1,034 1,084	1,825 927 898	1,514 748 766	1,178 601 577	805 387 418	672 303 369	360 143 217	204 68 136	98 34 64	49 17 32	6 4 2	1 1 1	.........	.........
ST. DOMINGO	P. 27,106 M. 13,382 F. 13,724	923 471 452	806 419 387	747 384 363	715 341 374	726 360 366	3,917 1,975 1,942	3,245 1,674 1,571	1,792 953 839	611 321 290	589 311 278	559 283 276	486 266 220	514 261 253	509 234 275	488 245 243	510 237 273	2,245 1,049 1,196	2,517 1,201 1,316	2,104 1,035 1,069	1,667 821 846	1,400 706 694	1,044 538 506	934 461 473	698 290 408	600 251 349	322 132 190	206 90 116	101 33 68	37 13 24	8 2 6	2 ... 2	1 ... 1	.........
Civil Parish, GARSTON	P. 17,289 M. 8,756 F. 8,533	500 265 235	435 220 215	436 242 194	419 216 203	411 200 211	2,201 1,143 1,058	1,821 904 917	1,007 510 497	314 155 159	324 156 168	309 138 171	333 167 166	317 152 165	370 196 174	348 170 178	360 181 179	1,544 798 746	1,701 842 859	1,499 754 745	1,197 618 579	966 500 466	756 405 351	631 333 298	451 235 216	381 202 179	186 83 103	148 62 86	83 36 47	29 12 17	9 4 5	3 ... 3	... ... ...	1 ... 1
Wards— AIGBURTH	P. 1,940 M. 2,121 F. 2,819	101 64 37	84 43 41	101 56 45	82 45 37	88 44 44	456 252 204	378 184 194	233 116 117	73 31 42	75 36 39	81 29 52	90 34 56	91 34 57	117 40 77	114 41 73	121 47 74	480 171 309	528 179 349	518 207 311	388 161 227	276 119 157	226 120 106	196 90 106	168 83 85	142 69 73	73 30 43	58 24 34	39 18 21	10 4 6	6 2 4	2 ... 2	... ... ...	1 ... 1
GARSTON	P. 12,349 M. 6,635 F. 5,714	399 201 198	351 177 174	335 186 149	337 171 166	323 156 167	1,745 891 854	1,443 720 723	774 394 380	241 124 117	249 120 129	228 109 119	243 133 110	226 118 108	253 156 97	234 129 105	239 134 105	1,064 627 437	1,173 663 510	981 547 434	809 457 352	690 381 309	530 285 245	435 243 192	283 152 131	239 133 106	113 53 60	90 38 52	44 18 26	19 8 11	3 2 1	1 ... 1	.........	.........
Civil Parish, KIRKDALE	P. 69,386 M. 35,327 F. 34,059	1,977 984 993	1,766 916 850	1,732 853 879	1,735 844 891	1,723 836 887	8,933 4,433 4,500	8,080 4,007 4,073	4,374 2,189 2,185	1,526 751 775	1,368 722 646	1,476 763 713	1,429 741 688	1,383 708 675	1,362 678 684	1,341 693 648	1,376 729 647	5,492 2,818 2,674	6,170 3,222 2,948	4,998 2,508 2,490	4,354 2,250 2,104	3,767 1,953 1,814	3,129 1,622 1,507	2,763 1,409 1,354	2,052 1,047 1,005	1,814 981 833	1,025 531 494	703 345 358	315 159 156	125 56 69	25 12 13	4 ... 4	2 ... 2	.........
Wards— KIRKDALE	P. 43,846 M. 21,827 F. 22,019	1,221 610 611	1,114 569 545	1,067 524 543	1,105 555 550	1,126 544 582	5,633 2,802 2,831	5,211 2,568 2,643	2,840 1,437 1,403	972 490 482	873 472 401	960 489 471	923 485 438	899 461 438	846 410 436	861 453 408	841 424 417	3,422 1,694 1,728	3,754 1,866 1,888	3,158 1,552 1,606	2,725 1,352 1,373	2,314 1,182 1,132	1,908 931 977	1,729 835 894	1,326 648 678	1,145 582 563	689 341 348	489 215 274	222 97 125	87 34 53	17 7 10	1 ... 1	1 ... 1	.........
SANDHILLS	P. 25,540 M. 13,500 F. 12,040	756 374 382	652 347 305	665 329 336	630 289 341	597 292 305	3,300 1,631 1,669	2,869 1,439 1,430	1,534 752 782	554 261 293	495 250 245	516 274 242	506 256 250	484 247 237	516 268 248	480 240 240	535 305 230	2,070 1,124 946	2,416 1,356 1,060	1,840 956 884	1,629 898 731	1,453 771 682	1,221 691 530	1,034 574 460	726 399 327	669 399 270	336 190 146	214 130 84	93 62 31	38 22 16	8 5 3	3 ... 3	1 ... 1	.........
Civil Parish, LIVERPOOL	P. 147,405 M. 73,226 F. 74,179	3,799 1,912 1,887	3,189 1,619 1,570	3,216 1,605 1,611	3,132 1,588 1,544	3,104 1,507 1,597	16,440 8,231 8,209	14,453 7,154 7,299	8,339 4,203 4,136	2,645 1,319 1,326	2,857 1,406 1,451	2,688 1,284 1,404	2,918 1,404 1,514	2,851 1,351 1,500	2,969 1,464 1,505	3,006 1,434 1,572	3,148 1,526 1,622	12,500 5,887 6,613	13,890 6,867 7,023	11,435 5,710 5,725	10,369 5,272 5,097	9,424 4,911 4,513	7,485 3,855 3,630	6,451 3,343 3,108	4,516 2,288 2,228	4,311 2,196 2,115	2,302 1,117 1,185	1,427 650 777	615 247 368	290 80 210	58 20 38	13 5 8	3 1 2	2 1 1



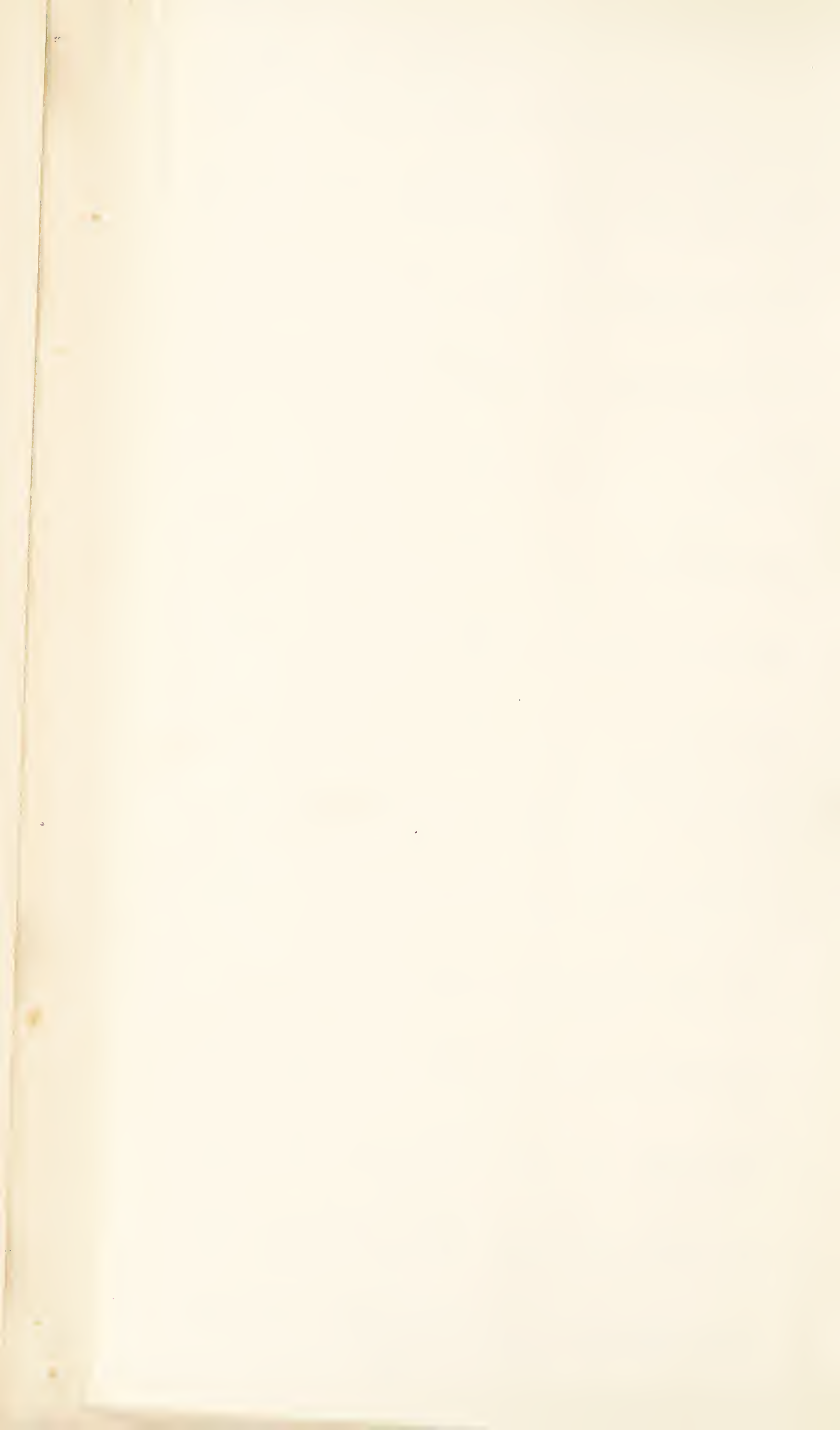
Census 1901.—Ages of Persons, Males and Females, in the City and County Borough of Liverpool and its Constituent Wards, including Garston, 1901.—*Continued.*

All Ages.			Under 1 Year.	1—	2—	3—	4—	Under 5 Years.	5—	10—	13—	14—	15—	16—	17—	18—	19—	20—	21—	25—	30—	35—	40—	45—	50—	55—	60—	65—	70—	75—	80—	85—	90—	95—	100 and upwards	
Civil Parish—continued.																																				
Wards—																																				
ABERCROMBY	P.	26,025	476	394	397	376	380	2,032	2,009	1,228	402	464	452	509	500	530	541	584	2,358	2,590	2,082	1,811	1,522	1,364	1,206	1,130	1,115	709	483	236	126	32	9	1	...	
	M.	11,569	222	204	200	188	198	1,012	989	624	195	228	199	228	210	237	226	243	955	1,015	860	779	681	500	518	515	573	337	224	86	30	11	4	...	...
	F.	14,456	254	190	197	188	191	1,020	1,020	604	207	236	253	281	290	293	315	341	1,403	1,575	1,222	1,032	841	774	688	615	542	372	259	150	96	21	5	1	...	
CASTLE STREET.....	P.	628	10	8	5	6	6	35	32	23	6	12	5	12	14	11	19	12	74	87	65	48	40	36	33	28	12	16	6	1	1	...	...	...	...
	M.	279	3	4	1	2	1	11	15	6	4	4	2	8	5	4	9	5	29	31	32	26	16	19	21	12	6	11	3	...	...	...	...	...	...
	F.	349	7	4	4	4	5	24	17	17	2	8	3	4	9	7	10	7	45	56	33	22	24	17	12	16	6	5	3	1	1	...	...	...	...	...
EXCHANGE.....	P.	3,710	72	51	47	60	48	278	310	155	49	59	68	78	84	85	83	96	378	387	300	254	276	193	189	123	136	65	35	18	10	1	...	...	...	...
	M.	1,980	41	26	24	30	17	138	152	76	23	33	31	35	32	48	46	54	198	229	177	144	163	111	99	62	74	27	17	8	3	...	...	...	...
	F.	1,730	31	25	23	30	31	140	158	79	26	26	37	43	52	37	37	42	180	158	123	110	113	82	90	61	62	38	18	10	7	1	...	...	...	...
GREAT GEORGE	P.	17,387	419	349	346	315	337	1,766	1,599	921	287	312	330	368	383	388	400	463	1,561	1,633	1,326	1,206	1,170	872	798	553	505	284	159	68	30	4	...	...	...	1
	M.	8,469	224	183	178	163	156	904	794	412	138	143	152	172	184	209	175	214	678	816	641	597	605	451	410	267	260	139	75	28	5	...	...	...	...
	F.	8,918	195	166	168	152	181	862	805	509	149	169	178	196	199	179	225	249	883	817	685	609	565	421	388	286	245	145	84	40	25	4	...	...	...	1
NORTH SCOTLAND.....	P.	25,153	818	686	699	680	647	3,480	2,926	1,596	518	532	484	494	490	459	482	505	2,098	2,301	1,791	1,732	1,460	1,149	974	623	543	291	144	53	23	5	...	...	...	...
	M.	12,917	392	353	369	317	327	1,758	1,458	805	260	272	230	245	252	233	246	260	1,076	1,237	937	921	741	594	559	338	280	140	49	19	5	2	...	...	...	...
	F.	12,236	426	333	330	313	320	1,722	1,468	791	258	260	254	249	238	226	236	245	1,022	1,064	854	811	719	555	415	285	263	151	95	34	18	3	...	...	...	...
ST. ANNE'S.....	P.	27,219	664	601	594	602	543	3,004	2,569	1,487	416	534	479	537	517	545	516	572	2,183	2,504	2,236	2,138	1,969	1,545	1,290	726	770	342	213	87	32	5	2	1	...	...
	M.	14,098	345	296	294	319	274	1,528	1,236	775	210	256	242	282	262	263	266	263	1,006	1,281	1,190	1,134	1,117	866	733	424	426	173	111	38	11	3	1	1	...	...
	F.	13,121	319	305	300	283	269	1,476	1,333	712	206	278	237	255	255	282	250	309	1,177	1,223	1,046	1,004	852	679	557	302	344	169	102	49	21	2	1	...	...	...
ST. PETER'S	P.	8,400	180	132	133	138	146	729	670	597	226	194	120	150	151	163	215	183	730	807	617	585	593	475	402	278	249	135	78	36	15	2	...	...	...	...
	M.	4,625	95	71	73	67	78	384	315	375	123	97	45	76	81	103	110	111	406	453	350	315	340	268	244	154	139	73	40	18	4	1	...	...	...	...
	F.	3,775	85	61	60	71	68	345	355	222	103	97	75	74	70	60	105	72	324	354	267	270	253	207	158	124	110	62	38	18	11	1	...	...	...	...
SOUTH SCOTLAND.....	P.	27,813	875	715	731	744	736	3,801	3,205	1,696	538	557	538	542	510	580	531	518	2,203	2,544	2,078	1,839	1,730	1,318	1,054	699	711	305	204	73	34	3	1	1	...	...
	M.	13,812	445	361	334	360	342	1,842	1,636	816	266	278	287	254	229	272	260	268	1,103	1,284	1,034	961	898	687	521	334	298	150	87	34	13	...	...	...	...
	F.	14,001	430	354	397	384	394	1,959	1,569	880	272	279	251	288	281	308	271	250	1,100	1,260	1,044	878	832	631	533	365	413	155	117	39	21	3	1	1	...	...
VAUXHALL.....	P.	11,070	285	253	264	261	252	1,315	1,133	636	203	193	212																							



Census 1901.—Ages of Persons, Males and Females, in the City and County Borough of Liverpool and its Constituent Wards, including Garston, 1901.—Continued.

		All Ages.	Under 1 Year.	1—	2—	3—	4—	Under 5 Years.	5—	10—	13—	14—	15—	16—	17—	18—	19—	20—	21—	25—	30—	35—	40—	45—	50—	55—	60—	65—	70—	75—	80—	85—	90—	95—	100 and upwards																															
Civil Parish—continued.																																																																		
TOXTETH PARK—																																																																		
SEFTON PARK EAST	P.	18,894	397	319	371	336	334	1,757	1,589	947	299	324	330	352	361	375	384	383	1,623	1,958	1,703	1,388	1,193	944	695	626	583	409	326	200	107	29	8	1	...																															
	M.	8,030	209	172	180	171	178	910	785	475	155	150	143	142	126	156	140	151	564	706	681	594	533	399	299	276	246	156	121	74	37	10	1	...	...																													
	F.	10,864	188	147	191	165	156	847	804	472	144	174	187	210	235	219	244	232	1,059	1,252	1,022	794	660	545	396	350	337	253	205	126	70	19	7	1	...																															
SEFTON PARK WEST.....	P.	11,293	220	208	205	182	212	1,027	908	523	184	179	182	203	201	235	231	266	1,114	1,274	1,052	863	668	573	447	328	307	222	155	79	55	9	8	...	...																													
	M.	4,413	116	112	95	92	92	507	434	240	79	72	70	63	79	82	78	82	335	373	396	329	269	237	185	141	132	99	64	37	25	3	2	...	...																													
	F.	6,880	104	96	110	90	120	520	474	283	105	107	112	140	122	153	153	184	779	901	656	534	399	336	262	187	175	123	91	42	30	6	6	...	...																													
Civil Parish,																																																																		
WALTON-ON-THE-HILL	P.	54,615	1,485	1,295	1,310	1,282	1,234	6,606	5,914	3,277	1,047	1,073	1,015	1,089	963	1,114	1,023	1,000	4,190	4,743	4,292	3,664	3,214	2,500	2,077	1,511	1,658	1,090	813	451	229	54	6	2	...																															
	M.	25,841	773	606	662	657	638	3,336	2,924	1,617	516	514	486	493	415	533	476	452	1,922	2,127	1,971	1,640	1,559	1,246	1,007	703	765	515	343	180	86	15	...	...	...																												
	F.	28,774	712	689	648	625	596	3,270	2,990	1,600	531	559	529	596	548	581	547	548	2,268	2,616	2,321	2,024	1,655	1,254	1,070	808	893	575	470	271	143	39	6	2	...																															
Wards—																																																																		
ANFIELD	P.	13,049	303	244	277	273	283	1,380	1,298	748	244	232	224	237	246	282	244	233	1,049	1,162	1,040	909	751	665	540	424	480	269	215	94	64	16	2	1	...																															
	M.	6,047	165	121	150	138	148	722	651	374	114	104	100	102	103	119	106	100	452	512	466	403	360	315	250	190	219	133	89	32	27	4	...	...	...																												
	F.	7,002	138	123	127	135	135	658	647	374	130	128	124	135	143	163	138	133	597	650	574	506	391	350	290	234	261	136	126	62	37	12	2	1	...																															
FAIRFIELD (part of)	P.	526	3	2	5	4	6	20	32	24	5	14	11	21	8	15	21	14	66	48	40	31	27	31	28	25	19	13	6	5	1	1	...	...	...																												
	M.	178	2	...	2	1	3	8	18	11	3	5	4	7	3	1	3	3	15	5	16	7	13	13	13	10	8	6	3	2	1	...	...	...	...																											
	F.	348	1	2	3	3	3	12	14	13	2	9	7	14	5	14	18	11	51	43	24	24	14	18	15	15	11	7	3	3	...	...	...	...	...																										
WALTON	P.	21,170	624	601	553	553	514	2,845	2,499	1,359	449	435	417	465	370	441	401	377	1,624	1,962	1,718	1,417	1,190	930	771	538	458	224	152	84	33	10	1	...	...																													
	M.	10,168	335	275	278	292	262	1,442	1,243	685	224	211	195	204	163	220	198	178	766	902	826	663	544	466	382	254	205	92	63	30	9	3	...	...	...																												
	F.	11,002	289	326	275	261	252	1,403	1,256	674	225	224	222	261	207	221	203	199	858	1,060	892	754	646	464	389	284	253	132	89	54	24	7	1	...	...																													
WARBRECK.....	P.	19,870	555	448	475	452	431	2,361	2,085	1,146	349	392	363	366	339	376	357	376	1,451	1,571	1,494	1,307	1,246	874	738	524	701	584	440	268	131	27	3	1	...																															
	M.	9,448	271	210	232	226	225	1,164	1,012	547	175	194	187	180	146	193	169	171	689	708	663	567	642	452	362	249	333	284	188	116	49	8	...	...	...																												
	F.	10,422	284	238	243	226	206	1,197	1,073	599	174	198	176	186	193	183	188	205	762	863	831	740	604	422	376	275	368	300	252	152	82	19	3	1	...																															
Civil Parish and Ward,																																																																		
WAVERTREE	P.	25,303	810	681	671	589	606	3,357	2,657	1,426	502	479	466	482	473	482	473	473	2,080	2,743	2,165	1,723	1,371	1,079	923	675	534	328	219	132	44	16	1	...	...																													
	M.	11,736	396	349	334	277	311	1,667	1,308	683	232	225	235	239	225	224	218	217	914	1,202	1,013	769	636	507	402	303	226	133	82	56	14	6	...	...	...																												
	F.	13,567	414	332	337	312	295	1,690	1,349	743	270	254	231	243	248	258	255	256	1,166	1,541	1,152	954	735	572	521	372	308	195	137	76	30	10	1	...	...																													
Civil Parish,																																																																		
WEST DERBY	P.	130,550	3,557	3,319	3,206	3,215	3,083	16,380	14,657	8,125	2,628	2,701	2,616	2,614	2,509	2,723	2,509	2,626	10,400	12,222	10,281	8,758	7,187	6,110	4,902	3,773	2,977	1,741	1,160	604	277	55	13	2	...																															
	M.	61,922	1,819	1,650	1,575	1,567	1,551	8,162	7,363	4,043	1,245	1,375	1,229	1,236	1,205	1,279	1,154	1,233	4,740	5,598	4,862	4,120	3,427	2,927	2,241	1,713	1,270	723	450	207	84	28	7	1	...																															
	F.	68,628	1,738	1,669	1,631	1,648	1,532	8,218	7,294	4,082	1,383	1,326	1,387	1,378	1,304	1,444	1,355	1,393	5,660	6,624	5,419	4,638	3,760	3,183	2,661	2,060	1,707	1,018	710	397	193	27	6	1	...																															
Wards—																																																																		
EDGE HILL	P.	32,20,																																																																



STATISTICS

RELATING TO

BIRTHS, DEATHS, AND CAUSES OF DEATH, &c.,
ZYMOTIC DISEASES AND THEIR INCIDENCE.

BIRTHS.

During the fifty-two weeks of the year, terminating on Saturday, December 27th, 1902, the returns of the local registrars recorded 24,283 births within the city. Of the total births 12,371 were males and 11,912 were females.

The birth-rate in the City of Liverpool is considerably above the average of the great towns. During 1902 the birth-rate was 34·2 per 1,000 of the population; the average of the previous five years (1897-1901) being 33·1. The rates are calculated upon the corrected population as ascertained by the Census of 1891 and 1901.

The variations in the birth-rate and the distribution of the births in the different wards and districts of the city, which together comprise 14,909 acres (23 square miles), are indicated upon the accompanying plan-map (see Appendix), and have also been arranged in the following tables:—

BIRTHS.

DISTRICTS.	1st Quarter.		2nd Quarter.		3rd Quarter.		4th Quarter.		1902.		Corrected Average Rate per 1000 during the 5 years 1897-1901.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Births.	Rate per 1000	
Scotland	290	325	260	277	279	291	271	232	2225	42·0	39·8
Exchange	168	160	148	135	175	151	132	147	1216	29·4	30·2
Abereromby	223	230	235	203	231	211	216	208	1757	33·8	31·1
Everton	636	578	559	564	593	557	576	564	4627	37·6	36·3
Kirkdale	332	321	354	269	297	279	279	265	2396	34·3	34·5
West Derby—West	381	398	355	385	398	356	351	362	2986	34·0	35·7
Toxteth	501	462	449	405	523	445	462	424	3671	34·7	32·6
Walton	221	228	236	244	262	235	236	235	1897	33·6	32·3
West Derby—East	190	157	153	169	156	168	144	165	1302	29·0	25·3
Wavertree	110	114	139	121	128	117	119	114	962	35·2	30·2
Sefton Park	72	75	61	70	98	84	64	79	603	19·0	22·2
(late Toxteth Rural)											
Garston	75	69	82	86	69	98	82	80	641	35·9	31·5
City.....	3199	3117	3031	2928	3209	2992	2932	2875	24283	34·2	33·1

The birth-rate is still very high in the old parts of the city, in some instances higher than in the rapidly-extending areas in the suburbs. The high birth-rate amongst the poorer classes no doubt partially results from very early marriage.

The following table shows the population, number of births, and the corrected birth-rate per 1,000 during the last twenty-five years:—

Year.	Population.	No. of Births.	Rate per 1,000.
1878	532,681	20,612	38·7
1879	538,338	20,844	38·7
1880	544,056	20,783	38·2
1881	551,617	20,762	37·6
1882	548,065	20,498	37·4
1883	544,547	19,907	36·6
1884	541,031	20,071	37·1
1885	537,548	19,464	36·2
1886	534,088	19,559	36·6
1887	530,649	18,414	34·7
1888	527,233	17,777	33·7
1889	523,838	17,676	33·7
1890	520,466	17,592	33·8
1891	518,302	17,832	34·4
1892	519,590	17,758	34·2
1893	520,882	18,328	35·2
1894	522,178	17,893	34·3
*1895	*652,523	*22,006	*33·7
1896	658,050	21,943	33·3
1897	663,633	22,280	33·6
1898	669,243	22,227	33·2
1899	674,912	22,488	33·3
1900	680,628	22,762	33·4
1901	686,332	21,980	32·0
** 1902	** 710,337	** 24,283	** 34·2

* City area extended.

** City area extended.

The foregoing table shews the decrease in the birth-rate during the last 25 years. This decrease has, however, been even more pronounced in other parts of the country, and notwithstanding the decline in Liverpool, the birth-rate in this City is still amongst the highest, being exceeded by only two of the thirty-three great towns (see pages 7 and 8).

The following table shows the *Natural* increase or decrease of population, that is, the increase or decrease in the number of births over deaths during the year 1902, in the several districts of the City. In only one district, viz., Exchange, is any decrease shown; the nett result in the City showing an increase of births over deaths of 8,289.

DISTRICTS.							Births.	Deaths.	Number of Births over Deaths.	Number of Deaths over Births.
Scotland	...	...	...	...	...	...	2,225	1,745	480	—
Exchange	...	...	...	...	...	...	1,216	1,432	—	216
Abercromby	...	...	...	...	...	...	1,757	1,155	602	—
Everton	...	...	...	...	...	...	4,627	2,735	1,892	—
Kirkdale	...	...	...	...	...	...	2,396	1,494	902	—
West Derby—West	..	...	...	...	...	...	2,986	1,729	1,257	—
Toxteth	...	...	...	...	...	...	3,671	2,421	1,250	—
Walton	...	...	...	...	...	...	1,897	887	1,010	—
West Derby—East	...	...	...	...	...	...	1,302	721	581	—
Wavertree	...	...	...	...	...	...	962	399	563	—
Sefton Park (late Toxteth Rural)	...	...	...	...	...	...	603	397	206	—
Garston	...	...	...	...	...	...	641	277	364	—
City	...	...	...	...	...	...	24,283	15,392	8,891	216
Hospitals (Residences outside City)	...	...	...	...	...	...	—	602	—	—
Total	...	...	...	...	...	...	24,283	15,994	8,289	—

The following tables give the estimated population, number of births recorded and birth-rate of eighty of the large towns of the United Kingdom.

TOWNS.							Estimated Popula- tion in the middle of the year 1902.	No. of Births.	Annual Rate to 1,000 of population.
London	...	...	...	...	...	...	4,579,110	132,810	28·5
Croydon	...	...	...	...	...	...	137,917	3,655	26·1
Willesden	...	...	...	...	...	...	121,611	3,922	31·7
Hornsey	...	...	...	...	...	...	75,565	1,596	20·8
Tottenham	...	...	...	...	...	...	106,535	3,418	31·6
West Ham	...	...	...	...	...	...	275,408	9,549	34·1
East Ham	...	...	...	...	...	...	104,023	3,853	36·4
Leyton	...	...	...	...	...	...	103,479	3,213	30·5
Walthamstow	...	...	...	...	...	...	101,318	3,491	33·9
Hastings	...	...	...	...	...	...	65,893	1,222	18·2
Brighton	...	...	...	...	...	...	124,539	3,071	24·3
Portsmouth	...	...	...	...	...	...	191,909	5,284	27·1
Bournemouth	...	...	...	...	...	...	61,628	1,074	17·1
Southampton	...	...	...	...	...	...	107,756	3,154	28·8
Reading	...	...	...	...	...	...	73,802	1,938	25·8
Northampton	...	...	...	...	...	...	88,592	2,279	25·3
Ipswich	...	...	...	...	...	...	67,840	1,908	27·7
Great Yarmouth	...	...	...	...	...	...	51,610	1,439	27·4
Norwich	...	...	...	...	...	...	113,178	3,204	27·9
Plymouth	...	...	...	...	...	...	110,057	3,015	27·0
Devonport	...	...	...	...	...	...	72,307	2,137	29·1
Bristol	...	...	...	...	...	...	334,632	9,355	27·5
Hanley	...	...	...	...	...	...	62,486	2,239	35·3
Burton-on-Trent	...	...	...	...	...	...	50,973	1,392	26·9
Wolverhampton	...	...	...	...	...	...	95,712	3,071	31·6
Walsall	...	...	...	...	...	...	88,338	3,115	34·7
Handsworth	...	...	...	...	...	...	55,491	1,444	25·6
West Bromwich	...	...	...	...	...	...	65,938	2,336	34·9
Birmingham	...	...	...	...	...	...	528,181	17,079	31·8
King's Norton	...	...	...	...	...	...	60,779	1,859	30·1
Smethwick	...	...	...	...	...	...	56,893	1,974	34·1
Aston Manor	...	...	...	...	...	...	78,481	2,339	29·3
Coventry	...	...	...	...	...	...	71,475	2,073	28·5
Leicester	...	...	...	...	...	...	216,389	6,410	29·1
Grimsby	...	...	...	...	...	...	64,596	1,974	30·1
Nottingham	...	...	...	...	...	...	243,191	6,867	27·8
Derby	...	...	...	...	...	...	116,982	3,326	28·0
Stockport	...	...	...	...	...	...	94,422	2,636	27·5

TOWNS.							Estimated Popula- tion in the middle of the year 1902.	No. of Births.	Annual Rate to 1,000 of population.
Birkenhead	...	...	...	...	...	...	112,396	3,731	32·7
Wallasey	...	...	...	...	...	...	56,173	1,602	28·1
Bootle...	...	...	...	...	...	...	59,776	1,991	32·8
St. Helens	...	...	...	...	...	...	85,986	3,279	37·5
Wigan...	...	...	...	...	...	...	61,537	2,368	37·9
Warrington	...	...	...	...	...	...	65,419	2,376	35·7
Bolton	...	...	...	...	...	...	171,082	4,736	27·2
Bury	...	...	...	...	...	...	58,182	1,232	20·8
Manchester	...	...	...	...	...	...	549,170	18,301	32·8
Salford	...	...	...	...	...	...	224,007	7,699	33·8
Oldham	...	...	...	...	...	...	138,091	3,659	26·1
Rochdale	...	...	...	...	...	...	84,057	2,048	24·0
Burnley	...	...	...	...	...	...	98,383	2,914	29·1
Blackburn	...	...	...	...	...	...	130,318	3,387	25·6
Preston...	...	...	...	...	...	...	113,766	3,341	28·9
Barrow-in-Furness	...	...	...	...	...	...	58,372	1,963	33·1
Huddersfield	...	...	...	...	...	...	95,000	2,354	24·4
Halifax	...	...	...	...	...	...	105,932	2,286	21·3
Bradford	...	...	...	...	...	...	281,771	6,575	23·0
Leeds	...	...	...	...	...	...	437,037	13,246	29·8
Sheffield	...	...	...	...	...	...	418,177	14,182	33·4
Rotherham	...	...	...	...	...	...	55,934	2,007	35·3
York	...	...	...	...	...	...	79,111	2,320	28·9
Hull	...	...	...	...	...	...	245,449	8,000	32·1
Middlesbrough	...	...	...	...	...	...	93,355	3,413	36·0
Stockton-on-Tees	...	...	...	...	...	...	51,745	1,741	33·1
West Hartlepool	...	...	...	...	...	...	65,161	2,393	36·1
Sunderland	...	...	...	...	...	...	148,007	5,393	35·9
South Shields	...	...	...	...	...	...	103,330	3,830	36·5
Gateshead	...	...	...	...	...	...	113,013	4,220	36·7
Newcastle-on-Tyne	...	...	...	...	...	...	219,150	7,259	32·6
Tynemouth	...	...	...	...	...	...	52,009	1,784	33·7
Newport, Mon.	...	...	...	...	...	...	68,901	2,295	32·8
Cardiff	...	...	...	...	...	...	168,909	5,408	31·5
Rhondda	...	...	...	...	...	...	117,011	4,937	41·5
Merthyr Tydfil	...	...	...	...	...	...	70,568	2,824	39·4
Swansea	...	...	...	...	...	...	95,059	3,005	31·1
Edinburgh	...	...	...	...	...	...	322,966	8,204	25·0
Glasgow	...	...	...	...	...	...	775,601	25,084	31·8
Dublin	...	...	...	...	...	...	379,003	11,052	28·7
Belfast	...	...	...	...	...	...	358,693	11,113	30·5
LIVERPOOL	...	...	...	...	...	...	710,337	24,283	4

DEATHS.

The most interesting, as well as the most important statistics are those dealing with mortality and its causes. These are set forth in the ensuing pages; the total death-rate of the city during the year was 21·6 per 1,000; the average rate during the eight years (1895-1902) since the extension of the city boundaries was 22·7.

The deaths of 7 residents of the City in the Infectious Diseases Hospital, Fazakerley, have been added to the total deaths within the City, and the deaths in public institutions of 602 non-residents, equal to 0·8 per 1,000, have been eliminated. On comparing the death-rates of one locality with those of another, it is absolutely necessary, before any correct conclusions can be drawn from the comparison, to ascertain whether the populations of the two localities are comparable in point of age; if they are not, then certain corrections must be made.

Quite apart from conditions of sanitation, mortality varies widely at different age-periods, as the next table shows; consequently the death-rate of the community is largely influenced by the proportions living at each age-period; the effect of a high birth-rate in raising the crude death-rate is well seen by the table, which also indicates plainly enough how the crude returns are modified if there happens to be an unusual proportion at any one age-period. A hospital for foundlings, or a home for aged people, will have a very different influence upon mortality returns than a school containing an equal number of boys from 10 to 15 years of age.

It will be seen from the table that if, for example, we could conceive that the whole population of Liverpool consisted of persons between the ages of 20 and 30, the death-rate last year would have been 5·6 per 1000; if, on the other hand, we could conceive that it consisted entirely of people under 1 year of age, the death-rate would be about 197·2 per 1,000, and if above 60 years, 75·9 per 1,000. It is plain that any variation in the *proportions* living at the respective age periods would affect the death-rate, and this with absolutely no change whatever in the condition of municipal sanitation.

THE FOLLOWING TABLE SHOWS THE ANNUAL RATE OF MORTALITY PER 1,000 AT EACH OF TWELVE AGE-PERIODS DURING LAST YEAR IN LIVERPOOL, AS WELL AS THE TOTAL NUMBER OF DEATHS.

THE DIFFERENCES WHICH THE FIGURES SHOW ARE VERY STRIKING:—

1902.	Under 1 year.	1 to 2	2 to 5	5 to 10	10 to 20	20 to 30	30 to 40	40 to 50	50 to 60	60 to 70	70 to 80	80 and upwards.	Total at all Ages.
Rate of Mortality per 1,000 living at ages indicated.	197·2	76·1	22·2	7·1	3·7	5·6	10·9	18·8	32·2	57·9	104·2	184·7	21·6
Total Number of Deaths at each Age Period.	3899	1298	1109	548	529	773	1122	1404	1577	1669	1086	378	15392

The following table gives the total number of deaths occurring in each of the four quarters of the year, allocated to each district:—

DISTRICTS.	1st Quarter.		2nd Quarter.		3rd Quarter.		4th Quarter.		Year.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Total Deaths.
Scotland	192	213	200	190	228	222	239	261	1745
Exchange	190	164	175	144	198	148	230	183	1432
Abercromby	158	134	162	124	141	108	178	150	1155
Everton	377	343	327	341	331	298	363	355	2735
Kirkdale	190	164	201	144	208	170	234	183	1494
West Derby (West)..	229	224	204	217	208	195	243	209	1729
Toxteth	314	315	314	261	296	281	328	312	2421
Walton.....	121	106	103	103	104	116	110	124	887
West Derby (East)...	98	121	92	90	71	78	73	98	721
Wavertree	54	42	51	58	43	38	61	52	399
Sefton Park	53	55	47	48	47	34	45	68	397
(late Toxteth Rural)									
Garston	41	38	27	29	37	28	40	37	277
Deaths of Non-Residents of the City in Workhouses and Hospitals.....	92	63	92	65	73	54	109	54	602
Total Deaths in City	2109	1982	1995	1814	1985	1770	2253	2086	15,994

Deaths of residents of the City in Public Institutions have been transferred to the districts from whence they came.

DEATHS IN PUBLIC INSTITUTIONS.

Deaths in Public Institutions are referred to the Wards from whence the patients came, but the following table shows that the deaths of 4,564 persons occurred in the undermentioned Institutions for the treatment of the sick:—

					Total Deaths.	Non-Residents of City.
Parish Workhouse	...	...	...	...	1,254	81
Royal Infirmary	...	...	...	...	334	76
Children's Infirmary	...	...	...	...	102	12
Lying-in Hospital	...	...	...	...	17	4
Consumption Hospital	...	...	...	...	24	4
Hahnemann Hospital	...	...	...	...	20	2
David Lewis Northern Hospital	...	...	...	...	213	38
Stanley Hospital	...	...	...	...	110	14
Royal Southern Hospital	...	...	...	...	230	43
Mill Road Infirmary	...	...	...	...	687	67
Hospital for Women	...	...	...	...	14	5
City Hospital North	...	...	...	...	89	5
Do. South	...	...	...	...	63	2
Do. Parkhill	...	...	...	...	172	7
Do. East, Mill Lane	...	...	...	...	60	1
Do. Priory Road	...	...	...	...	21	1
Do. Fazakerley	...	...	...	...	10	3
Walton Workhouse	...	...	...	...	618	141
Belmont Road Workhouse	...	...	...	...	45	36
St. Joseph's Home	...	...	...	...	27	21
Toxteth Workhouse	...	...	...	...	325	4
Home for Incurables	...	...	...	...	4	3
Turner Memorial Home	...	...	...	...	4	3
St. Augustine's Home	...	...	...	...	35	3
Kirkdale Home	...	...	...	...	17	2
Walton Gaol	...	...	...	...	12	6
Other Public Institutions	...	...	...	...	57	18
					4,564	602

From the returns made as to the residences of these persons 3,962 of the deaths in these establishments are classified in the districts from whence the patients were removed, viz.:—508 under Scotland district,

615 under Exchange district, 429 under Abercromby district, 691 under Everton, 351 under Kirkdale, 414 under West Derby (West), 564 under Toxteth, 152 under Walton, 108 under West Derby (East), 48 under Wavertree, 45 under Sefton Park (late Toxteth Rural) and 37 under Garston; 443 were non-residents, who had sought relief in Liverpool Institutions, and the remainder, 159 were waifs, strangers to the city, whose previous residences were unknown.

It is noteworthy that in Liverpool the proportion of deaths which take place in Public Institutions is larger than is the case in other towns, and the fact is an interesting one, as something may be learned of the social conditions of a locality when so large a proportion in times of sickness seek refuge in public institutions, more especially in the workhouses. Generally it implies poverty and want; but on the other hand it may also, and no doubt does, imply that the institutions have a wide reputation, and attract sufferers to them not only from within the city, but from a distance. Probably both of these conditions exercise influence, but be that as it may, the fact remains that there is no provincial city in which so large a proportion of the deaths takes place in workhouses and hospitals.

The following table shows the percentage of deaths which have occurred in public institutions during the 5 years, 1898-1902, in the great towns of Birmingham, Leeds, Manchester and Liverpool:—

	1898.	1899.	1900.	1901.	1902.	Average.
Birmingham	15·3	16·1	20·4	19·8	24·6	19·2
Leeds	11·8	12·4	12·5	14·0	14·5	13·0
Manchester	19·0	19·7	21·9	23·3	23·2	21·4
Liverpool	24·7	25·3	25·9	27·3	28·5	26·3

The results of the allocation of deaths in public institutions to the districts from whence the patients had been removed, and the addition

of these to the number of deaths of residents in those various districts, are shown in the following table, from which a calculated rate of mortality per 1,000 per annum of the inhabitants has been made. The rates are calculated upon the corrected population as ascertained by the Census of 1891 and 1901.

DISTRICTS.	Population.	1902.		Corrected Average Rate per 1000 during the five years 1897-1901
		Deaths.	Rate per 1000	
Scotland	52,876	1,745	33·0	33·6
Exchange	41,332	1,432	34·6	35·0
Abercromby	52,004	1,155	22·2	23·0
Everton	122,964	2,735	22·2	24·2
Kirkdale	69,798	1,994	21·4	21·6
West Derby (West)	87,751	1,729	19·7	21·2
Toxteth	105,636	2,421	22·9	23·1
Walton	56,379	887	15·7	15·6
West Derby (East)	44,872	721	16·0	16·8
Wavertree	27,304	399	14·6	15·2
Sefton Park (late Toxteth Rural)	31,579	397	12·6	11·8
Garston... ..	17,842	277	15·5	16·9
City	710,337	15,392	21·6	22·6

The District Registrars' Returns show that there were 26 deaths (18 of women and 8 of men) at the age of 90 and upwards, viz., 1 male and 3 females at 90, 4 males and 4 females at 91, 4 females at 92, 1 male and 1 female at 93, 1 male and 2 females at 94, 1 male and 1 female at 95, 2 females at 97, and 1 female at 99.

The death-rate per 1,000 for 1902 in each of the districts of the city is indicated upon the appended map. Scotland and Exchange districts, it must be remembered, contain a great number of common lodging-houses, some of which are resorted to by non-residents of the districts, persons of very migratory habits, and often indigent and broken down. This class tends to swell the mortality of these two districts.

The following tables give the estimated population, the number of deaths recorded, and the death-rate of eighty of the large towns of the United Kingdom :—

TOWNS.							Estimated Population in the middle of the year 1902.	No. of Deaths.	Annual Rate to 1000 of Popula- tion.
London	...	...	...	...	...	...	4,579,110	82,540	17·7
Croydon	...	...	...	...	...	...	137,917	1,957	14·0
Willesden	...	...	...	...	...	...	121,611	1,615	13·1
Hornsey	...	...	...	...	...	...	75,565	659	8·6
Tottenham	...	...	...	...	...	...	106,535	1,573	14·5
West Ham	...	...	...	...	...	...	275,408	4,782	17·1
East Ham	...	...	...	...	...	...	104,023	1,261	11·9
Leyton	...	...	...	...	...	...	103,479	1,255	11·9
Walthamstow	...	...	...	...	...	...	101,318	1,188	11·5
Hastings	...	...	...	...	...	...	65,893	968	14·5
Brighton	...	...	...	...	...	...	124,539	2,001	15·8
Portsmouth	...	...	...	...	...	...	191,909	3,269	16·8
Bournemouth	...	...	...	...	...	...	61,628	774	12·4
Southampton...	...	...	...	...	...	...	107,756	1,667	15·2
Reading	...	...	...	...	...	...	73,802	1,024	13·7
Northampton	...	...	...	...	...	...	88,592	1,371	15·2
Ipswich	...	...	...	...	...	...	67,840	989	14·3
Great Yarmouth	...	...	...	...	...	...	51,610	886	16·9
Norwich	...	...	...	...	...	...	113,178	1,919	16·7
Plymouth	...	...	...	...	...	...	110,057	1,902	17·0
Devonport	...	...	...	...	...	...	72,307	1,118	15·2
Bristol	...	...	...	...	...	...	334,632	5,905	17·4
Hanley	...	...	...	...	...	...	62,486	1,271	20·0
Burton-on-Trent	...	...	...	...	...	...	50,973	711	13·7
Wolverhampton	...	...	...	...	...	...	95,712	1,592	16·4
Walsall	...	...	...	...	...	...	88,338	1,425	15·9
Handsworth	...	...	...	...	...	...	55,491	614	10·9
West Bromwich	...	...	...	...	...	...	65,938	1,285	19·2
Birmingham	...	...	...	...	...	...	528,181	9,997	18·6
King's Norton	...	...	...	...	...	...	60,759	718	11·6
Smethwick	...	...	...	...	...	...	56,893	834	14·4
Aston Manor...	...	...	...	...	...	...	78,481	1,078	13·5
Coventry	...	...	...	...	...	...	71,475	1,017	14·0
Leicester	...	...	...	...	...	...	216,389	3,275	14·9
Grimsby	...	...	...	...	...	...	64,596	966	14·7
Nottingham	...	...	...	...	...	...	243,191	4,121	16·7
Derby	...	...	...	...	...	...	116,982	1,656	13·9
Stockport	...	...	...	...	...	...	94,422	1,823	19·0

TOWNS.	Estimated Population in the middle of the year 1902.	No. of Deaths.	Annual Rate to 1000 of Popula- tion.
Birkenhead	112,396	2,024	17·7
Wallasey	56,173	791	13·9
Bootle... ..	59,776	1,198	19·7
St. Helens	85,986	1,751	20·0
Wigan... ..	61,537	1,291	20·6
Warrington	65,419	1,091	16·4
Bolton... ..	171,082	2,943	16·9
Bury	58,182	969	16·4
Manchester	549,170	11,143	20·0
Salford	224,007	4,393	19·3
Oldham	138,091	2,677	19·1
Rochdale	84,057	1,561	18·3
Burnley	98,383	1,946	19·5
Blackburn	130,318	2,243	16·9
Preston	113,766	2,205	19·1
Barrow-in-Furness	58,372	926	15·6
Huddersfield	95,000	1,716	17·8
Halifax	105,932	1,691	15·7
Bradford	281,771	4,530	15·8
Leeds	437,037	7,797	17·6
Sheffield	418,177	7,257	17·1
Rotherham	55,934	889	15·6
York	79,114	1,250	15·5
Hull	245,449	4,286	17·2
Middlesbrough	93,355	1,915	20·2
Stockton-on-Tees	51,745	895	17·0
West Hartlepool	65,161	1,003	15·1
Sunderland	148,007	2,928	19·5
South Shields	103,330	2,045	19·5
Gateshead	113,013	2,033	17·7
Newcastle-on-Tyne	219,150	4,428	19·9
Tynemouth	52,009	1,029	19·5
Newport Mon.	68,901	1,103	15·7
Cardiff... ..	168,909	2,885	16·8
Rhondda	117,011	2,223	18·7
Merthyr Tydfil	70,568	1,659	23·1
Swansea	95,059	1,556	16·1
Edinburgh	322,966	5,855	17·8
Glasgow	775,601	15,836	20·1
Dublin	379,003	9,341	24·2
Belfast	358,693	7,577	20·8
LIVERPOOL...	710,337	15,392	21·6

The above table is, with the exception of Liverpool, taken without correction from the Registrar General's Return.

INFANTILE MORTALITY.

This subject has been dealt with in detail in previous reports, but it is of sufficient importance to call for repetition.

The term "infant" is restricted to twelve months of age. It will be seen from the tables, or perhaps more readily from the plan-map appended, that the loss of infant life in the various districts of the City varies widely, the range being from 107 per 1,000 in the district where it is the lowest, up to 245 in the district where it is the highest. Even in the lowest, the death-rate of infants is five times as high as the general death-rate of the community.

The high mortality amongst infants, however good their surroundings, and however intelligently maternal care is exercised, arises from many causes: a certain proportion are premature, and cannot all survive, some are born with malformations and other defects which soon terminate their existence; others, the offspring of weakly parents, cannot long survive, and in spite of all care, there is a large proportion who will succumb to one or other of the many ailments to which infancy is susceptible. Making due allowance for these, it may be taken that an annual death-rate amongst infants, of 100 per thousand, is unavoidable, and if this be granted, it follows that anything above this is preventable, although the necessary means to prevent it are so extremely difficult to apply that even in the best districts the loss of infant life is in excess of the standard. In the poorer districts it is plain to the most casual observer that necessary care and attention are not given to infants: nothing is more common than to see the infant handed over to the custody of children or irresponsible persons, whilst the responsible guardians are either at work or engaged in some other occupation. The children of the very poor are in this way exposed to neglect and inattention which is practically unavoidable, and which, together with improper food and scanty clothing, is reflected in the sacrifice of life.

A much closer differentiation, however, is possible in each district than is indicated by these broad distinctions. Thus, in the districts of highest mortality, whilst there are instances in abundance of families in which every child has been reared, there are examples, far too numerous, in which all, or nearly all, of the children have perished in infancy, or before attaining to the age of five years.

In the course of an inquiry into infantile mortality, 1,082 families in which the death of an infant had occurred, were taken consecutively, and certain particulars concerning them ascertained. The total number of children born in these families had been 4,574, but out of that number 2,229 had died, practically all in infancy, representing 487 deaths out of every 1,000 born, a waste of life nearly five times as great as the standard alluded to. But the most remarkable series of excessive fatality occurred in twelve families in which the large total of 117 infants had been born, and no less than 98 had perished in infancy. These extreme examples, it must be remembered, are occurring in families in which, so far as municipal sanitation is concerned, there is very little to choose between them and many of the families who rear all, or nearly all, their children, nor can it be shown or inferred that there was any inherent weakness in the offspring, since those who have survived are of fair physique, not, as a class, suffering under any inherited condition likely to terminate their lives; but it is in the personal and domestic circumstances that the contrasts are most marked.

As regards the nature of the illness to which death is most commonly ascribed, it must be borne in mind that the obscurity of symptoms of illness in infants and young children often leaves a doubt as to which of two or more causes was the primary one. However during the year 1902 the total number of deaths of infants under one year of age was 3936, developmental diseases accounted for 1179, premature birth being answerable for 462, and atrophy for 626; general experience

justifies the assumption that the atrophy owed its origin in a very large proportion of cases to want of proper feeding. Zymotic diseases accounted for 763 deaths, the great majority of them, viz., 418, being due to diarrhœa, the exciting cause being no doubt the same as that in the case of atrophy. Following upon this comes whooping cough with 163 deaths, and measles with 62 deaths. Under the heading, "Diseases of the digestive system," no less than 344 deaths of infants are recorded, under that of "Diseases of the respiratory system" 771 deaths of infants are recorded, and under that of "Diseases of the nervous system" 548 deaths of infants are recorded.

Inquests were held on the bodies of 122 infants, under 12 months of age, who had been suffocated.

Always remembering that the natural guardian of the infant is the mother, and that it is only with extreme caution that the efforts of the municipality can be specially directed to the preservation of infant life, many matters present themselves in which action of the municipality cannot be other than beneficial.

It is necessary that some hospital provision should be made for infants suffering from whooping-cough, and in which they could be received together with the mother, or other natural guardian of the child, if necessary. With regard to feeding, there is strong evidence that the efforts of the Health Committee in widely circulating instructions as to the feeding of infants, in employing a large staff to give verbal instructions and to supervise, in establishing sterilised milk depôts at which milk specially prepared for infants can be obtained, in improving the general sanitation of slums, scavenging, &c., have resulted in marked benefit. The great difficulty which is encountered in some towns, owing to the fact that the work of the mother necessitates that the infant should be left often in incompetent hands, is not of relatively frequent occurrence in this City.

The following table indicates the incidence of infantile mortality in the various wards of the City, and during different seasons, also the proportion of deaths under five years to the total deaths.

DISTRICTS.	Quarters.				Total Deaths.	Deaths under 5 years of age.	Percent- age of Deaths under 5 years to Total Deaths.	Percent- age of Deaths under 1 year to Total Births.
	March.	June	Sept.	Dec.				
Scotland.....	164	160	241	258	1,745	823	47·1	22·1
Exchange	111	98	146	181	1,432	536	37·4	24·5
Abercromby	81	81	77	126	1,155	365	31·6	12·5
Everton	272	273	322	337	2,735	1,204	44·2	15·7
Kirkdale	118	144	200	177	1,494	639	42·7	16·7
West Derby (West).	172	150	180	215	1,729	717	41·4	15·0
Toxteth	220	225	273	298	2,421	1,016	41·9	17·1
Walton	83	89	106	100	887	378	42·6	13·1
West Derby (East) .	60	53	56	58	721	227	31·5	11·2
Wavertree	44	41	30	56	399	171	42·8	12·8
Sefton Park	43	19	25	34	397	121	30·4	14·6
(late Toxteth Rural)								
Garston	25	19	31	32	277	107	38·6	10·7
Workhouses & Hos- pitals (Residences outside City)	11	25	14	23	602	73	12·1	...
City	1,404	1,377	1,701	1,895	15,994	6,377	39·8	16·2

Deaths in Public Institutions are transferred to the Districts from whence the patients came.

The proportion which the deaths of children under five years of age has borne to the total deaths in the various districts of the City during the last five years is shown in the following table, and also the proportion of deaths of infants under one year of age to every hundred births registered.

DISTRICTS.	1898.		1899.		1900.		1901.		1902.	
	Percentage of Deaths under 5 years to Total Deaths.	Percentage of Deaths under 1 year to Total Births.	Percentage of Deaths under 5 years to Total Deaths.	Percentage of Deaths under 1 year to Total Births.	Percentage of Deaths under 5 years to Total Deaths.	Percentage of Deaths under 1 year to Total Births.	Percentage of Deaths under 5 years to Total Deaths.	Percentage of Deaths under 1 year to Total Births.	Percentage of Deaths under 5 years to Total Deaths.	Percentage of Deaths under 1 year to Total Births.
Scotland	50·4	23·8	49·9	25·1	45·0	24·1	45·1	22·2	47·1	22·1
Exchange	37·8	26·6	34·9	27·4	34·0	26·0	36·4	24·1	37·4	24·5
Abercromby	33·4	16·1	30·6	14·5	28·3	15·4	33·7	15·6	31·6	12·5
Everton	46·8	19·4	46·2	21·0	44·8	19·0	48·0	19·4	44·2	15·7
Kirkdale	46·4	17·5	44·7	18·8	44·6	19·5	44·4	19·5	42·7	16·7
West Derby (West)	45·5	17·7	42·1	18·8	40·5	16·8	45·8	17·8	41·4	15·0
Toxteth.....	43·5	18·3	43·4	20·4	42·0	19·9	41·6	18·8	41·9	17·1
Walton	42·2	12·5	47·0	16·5	42·1	14·0	48·3	15·5	42·6	13·1
West Derby (East).....	30·7	13·9	37·1	16·6	31·9	13·4	37·7	16·5	31·5	11·2
Wavertree	46·4	16·8	45·7	16·4	41·1	14·0	46·2	16·5	42·8	12·8
Sefton Park	37·0	12·2	34·8	13·6	36·0	10·5	29·3	12·0	30·4	14·6
(late Toxteth Rural)										
Garston	48·2	18·7	47·0	17·3	43·6	16·7	48·2	18·5	38·6	10·7
Workhouse and Hospitals (Residences outside of City)	10·2	...	8·6	...	10·8	...	11·8	...	12·1	...
City	42·3	18·5	42·1	19·8	39·2	18·6	42·0	18·7	39·8	16·2

CAUSES OF DEATH.

Full details as to the causes of death are set forth in table *E* in the Appendix; in this table the age at which each death took place and the district in which it occurred will also be found.

The following table gives a classification of the causes of death during the four quarters of the year, grouped under 16 classes.

CLASSES.	QUARTERS.				YEAR 1902.
	March	June.	Sept.	Dec.	
1. Zymotic and Septic Diseases	449	450	810	735	2,444
2. Diseases of Uncertain or Variable Seat.....	162	158	144	195	659
3. Constitutional Diseases.....	35	48	30	36	149
4. Tubercular Diseases	511	429	372	468	1,780
5. Diseases of the Nervous System	481	428	394	391	1,694
6. „ „ Circulatory „	329	317	252	276	1,174
7. „ „ Respiratory „	1,037	874	589	1,092	3,592
8. „ „ Digestive „	218	218	326	244	1,006
9. „ „ Lymphatic „	5	7	3	4	19
10. „ „ Urinary „	111	108	102	117	438
11. „ „ Reproductive „	19	23	12	13	67
12. „ „ Joints, &c.	9	7	11	9	36
13. „ „ Integumentary System	10	11	14	7	42
14. Dietetic Diseases.....	2	1	—	4	7
15. Developmental Diseases	472	484	455	500	1,911
16. Causes investigated at Coroner's Inquests ...	237	243	240	243	963
Causes not specified	4	3	1	5	13
All Causes	4,091	3,809	3,755	4,339	15,994

ZYMOTICS.

This class of disease is one calling for special attention, and is dealt with in some detail in the following tables, the first of which shows the localities and the periods of the fatal prevalence of zymotic diseases, and the subsequent tables deal specifically with each form of zymotic disease during 1902 :—

DISTRICTS.	Deaths from all causes.	ZYMOTICS.				
		Quarters.				Percentage of Zymotic Deaths to Deaths from all causes.
		March.	June.	Sept.	Dec.	
Scotland.....	1,745	46	50	116	90	17·3
Exchange	1,432	42	33	76	67	15·2
Abercromby	1,155	23	18	32	58	11·3
Everton	2,735	87	83	158	134	16·9
Kirkdale	1,494	33	51	107	61	16·8
West Derby (West).....	1,729	40	44	72	78	13·5
Toxteth	2,421	77	67	118	117	15·6
Walton	887	30	39	61	35	18·6
West Derby (East)	721	28	20	22	17	12·0
Wavertree	399	15	13	12	16	14·0
Sefton Park	397	12	7	15	25	14·8
(late Toxteth Rural)						
Garston	277	10	6	9	12	13·3
Workhouses and Hospitals (Residences outside City)	602	6	19	12	25	10·3
City	15,994	449	450	810	735	15·9

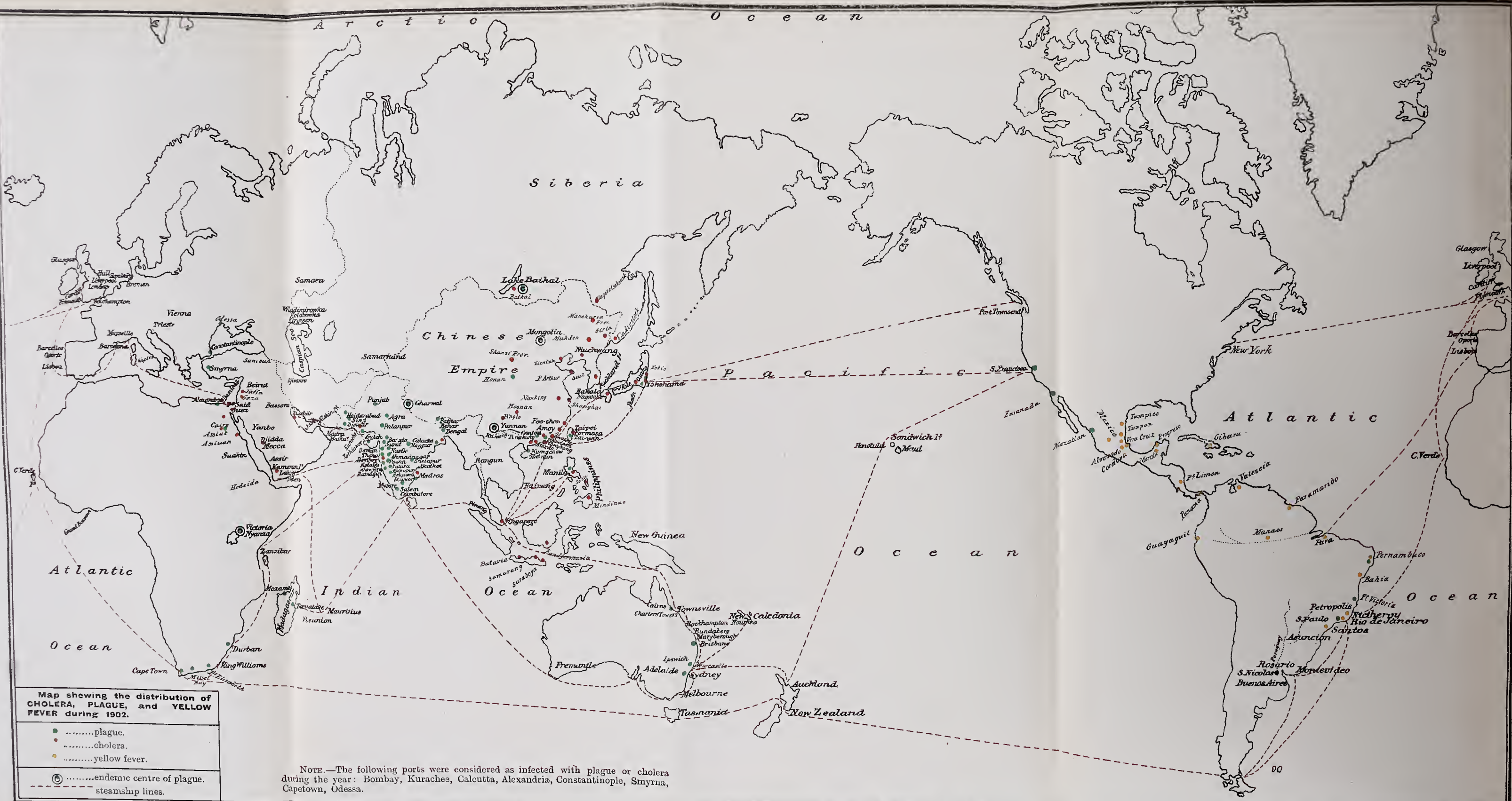
Deaths in Public Institutions are transferred to the Districts from whence the patients came.

Zymotic diseases occasioned 2,444 deaths during the year 1902, and accounted for 15·2 per cent. of the total mortality within the City during this period. The death-rate from zymotic diseases per 1,000 was 3·4. The deaths were as follows :—

	QUARTERS.				YEAR 1902.
	March.	June.	Sept.	Dec.	
Total Zymotics	449	450	810	735	2,444
Smallpox	2	2	7	9	20
Measles	4	36	46	248	334
Scarlatina	73	65	78	102	318
Diphtheria	51	48	43	58	200
Membranous Croup	6	5	4	7	22
Whooping-cough	162	143	70	32	407
Diarrhœa	29	37	412	133	611
Influenza	13	32	10	13	68
Fever {	Typhus	1	5	9	25
	Typhoid	43	36	55	190
	Simple Continued	—	1	—	2
Other Zymotics.....	65	40	75	67	247

NOTE.—Influenza, Measles, and Whooping-cough appear to have been predisposing causes in the case of many deaths primarily ascribed to Respiratory Disease (page 22), inasmuch as one or other of these Zymotics had preceded the fatal illness. See also notes to succeeding tables.





Map shewing the distribution of
CHOLERA, PLAGUE, and YELLOW
FEVER during 1902.

.....plague.
.....cholera.
.....yellow fever.

⊙.....endemic centre of plague.
- - - - - steamship lines.

NOTE.—The following ports were considered as infected with plague or cholera during the year: Bombay, Kurachee, Calcutta, Alexandria, Constantinople, Smyrna, Capetown, Odessa.

PLAGUE.

The precautionary measures adopted by the Health and Port Authorities at Liverpool and Glasgow, in the end of 1901 and the beginning of 1902, have prevented a recrudescence of the disease in these cities.

A few cases of plague on board ship reached Dunkirk and Marseilles, but prompt action was taken, and no extension occurred.

In Egypt, plague was still to be found in the cities of Alexandria and Assiout, and in the provinces. It also reached Odessa, Constantinople (a few cases), and Smyrna. It was, however, in India and the furthest East that as usual the disease wrought most havoc. In India the plague extended greatly in the Punjaub, and the services of additional medical men were requisitioned for those districts. In China the disease continued to prevail in epidemic form, chiefly at Hong-Kong, Canton and other important towns. Formosa and Yokohama were affected with plague during the year. From the latter city it was conveyed to Tokio, and from official reports seems to have been brought to that city in cotton imported through a Japanese firm doing business in Yokohama. In South Africa, Cape Colony was practically free from plague during the year. Plague-infected rats were, however, found occasionally at Port Elizabeth. An outbreak occurred at Durban in December, and here a heavy mortality was noticed amongst the rats in the infected districts.

Considerable danger to the United States lay in the existence of a definite nidus of plague at San Francisco, which was for a long time ignored by the official State Board of Health of California. This danger existed during nearly three years in that part of San Francisco known as Chinatown. At a special conference of the U.S. Boards of Health, a resolution was passed emphasising the fact that the gravity of the circumstance was greatly increased by the gross neglect of official duty of the State Board of Health of California.

Plague appeared at Mazatlan on the Mexican Coast, and is reported to be spreading. From Mazatlan the disease was carried to Ensanada, which is close to the United States frontier. Chinese direct from China are presumed to have brought the disease direct, or after transshipment at San Francisco, to Mazatlan, afterwards making their way to Ensanada.

So far no extension eastwards across the States has occurred, and the North Atlantic seaboard is still free from plague.

SMALL-POX.

During the first ten months of the year 1901, twenty-five cases of smallpox occurred in the City of Liverpool, eight of which were imported by sea, and one developed smallpox a few days after arrival from a neighbouring town.

The City was entirely free from smallpox during the month of November, 1901.

On the 6th December the ss. "Volta" arrived, having eleven convalescent cases of smallpox on board, five of which were temporarily detained. This was followed, on 12th December, by the discovery that a fireman from the ss. "Devonian" had landed on November 28th, and subsequently developed smallpox at his home. This case was followed by a second one at the same address, on the 22nd December.

On 19th December the ss. "Norseman" arrived; one case of smallpox was removed from her, and three persons who had been in contact developed smallpox shortly afterwards.

It does not appear that there were any further extensions from these cases.

Following on these cases arriving in 1901, and already reported on, repeated importations occurred from Boston in the early months of 1902. From January 1st till February 6th, 20 cases were landed at Liverpool, and during the remainder of the year smallpox was occasionally imported, chiefly from Spanish Ports.

The accompanying table shows the sequence and history of the importations by sea, and it will be observed that the same vessel has on an occasion left smallpox patients at the home and also at the outward port.

The appended diagrams show the consequences of some of these imported cases, and the extension of disease from person to person. The intense infectiousness of smallpox makes it difficult or impossible to trace the source of infection in the majority of instances.

IMPORTATIONS OF SMALLPOX BY SEA.

Date of Arrival in Liverpool.	Ship.	From.	History.	Disinfection.	Vaccination.
1901. December 6th.....	" Volta "	West Africa.....	Brought 11 convalescents into Liverpool, only 5 of whom required further detention in Hospital. During voyage had over 40 cases on board, 17 (?) cases and 2 deaths among Kroo boys, 13 cases and 2 deaths, including Surgeon, among Europeans.	Disinfection.....	All crew re-vaccinated, and some of passengers.
December 7th.....	" Devonian "	Boston.....	Reported all well. Smethurst who said he had been suffering from a cold, developed smallpox on December 12th; removed to Hospital.	Disinfection.....	No re-vaccination, all crew and cattlemen gone. Ship sailed 14th Dec.
December 19th ...	" Norseman "	Boston.....	Brought Watkins suffering from smallpox; 26 of the cattlemen who could not give satisfactory addresses were removed to New Ferry Hospital and re-vaccinated; 3 of these subsequently developed the disease, one died of haemorrhagic variety having no primary vaccination.	Disinfection.....	All crew and cattlemen re-vaccinated, 125 in number.

IMPORTATIONS OF SMALLPOX BY SEA—Continued.

Date of Arrival in Liverpool.	Ship.	From.	History.	Disinfection.	Vaccination.
1902.					
January 1st ...	"Ultonia"	Boston	Two cases were removed from the Royal Infirmary (January 4th).	Disinfection.....	No vaccination. Crew and cattlemen gone.
January 6th ...	"Lancastrian"	Boston	A case reported from this ship by Medical Officer of Health, Salford.	Disinfection.....	No vaccination.
January 11th ...	"Devonian"	Boston	Brought J. Connolly suffering from smallpox, removed to Hospital. 7 cattlemen, who could not give satisfactory addresses were removed to New Ferry Hospital. Of these J. Obie, who had been vaccinated for the first time on January 11th, developed confluent smallpox on the 15th. John Highland and R. Kelly, two cattlemen who had also been removed from the ship for isolation and observation, refused on the 16th to stay longer, as they wanted to sail in their ship on the 17th. They were, therefore, liberated on the morning of the 17th. Both went to No. 17, Duke Street. Highland visited a barber's shop, where he took suddenly ill with vomiting, and was removed to the Workhouse	Disinfection.....	Crew and Cattlemen said to have been re-vaccinated in Boston, and shewed scars and scratches. Re-vaccinated 12 cattle-men who had poor marks (including Obie, Kelly, and Taylor). Ship sailed January 17th.

January 23rd ...	"Cestrian"	Boston	<p>Infirmary, and thence to the Smallpox Hospital on 17th Jan. Kelly was also removed, and developed smallpox.</p> <p>William Taylor, re-vaccinated on board on the 11th, did not go to the address which he gave on board; he subsequently developed smallpox, went to Glasgow for a short time, came back by a coasting steamer, and was detected in the out-patient department of the Royal Infirmary (Feb. 15th). Seven cases in the City have been traced to this man.</p>	Disinfection.....	No vaccination.
January 25th ...	"Norseman"	Boston	<p>J. DeFaure, a cattleman, was removed from Workhouse Infirmary to Smallpox Hospital.</p> <p>One death (Jan. 5th) from smallpox on outward voyage (left Liverpool, Dec. 28th). Ship visited and found all well. All well vaccinated.</p>	Disinfection at Boston	Previously done at Liverpool, Dec. 19th, and at Boston (new hands).
February 3rd ...	"Ultonia"	Boston	<p>Brought P. Maher, cattleman, suffering from smallpox, Patient and attendant removed to New Ferry Hospital.</p>	Disinfection.....	Crew re-vaccinated at Boston, 28 cattlemen and firemen were re-vaccinated on arrival here.

IMPORTATIONS OF SMALLPOX BY SEA—Continued.

Date of Arrival in Liverpool.	Ship.	From.	History.	Disinfection.	Vaccination.
1902. February 6th.....	" Kansas "	Boston.....	Brought 9 convalescents and 1 contact (attendant). All were removed to New Ferry Hospital; 8 had already been isolated on board, and the 9th was found on making an inspection of the cattlemen; he had an abundant crop of vesicles on his arms. This ship sailed from Liverpool on January 4th, and it was reported that amongst the cattlemen were 2 who were ailing and had been treated by the Steward; 1 died at sea. At Boston, the other was landed as a case of smallpox, and all the cattlemen taken to the Quarantine Station and re-vaccinated, as also the crew. Later, and before the vessel sailed, 4 men were removed (5th Engineer, 2 refrigerating Engineers, and another), and put ashore by the Medical Officer. (There was a report that 20 men were put ashore).	Disinfection.....	Crew and some (old hands) of cattlemen re-vaccinated at Boston. Re-vaccinated 18 of crew and cattlemen shewing poor marks.
April 4th	" Reveil "	Swansea.....	Brought G. Griffith, cook, suffering from smallpox. Patient removed to Fazakerley Hospital.	Disinfection.....	Re-vaccinated 3 of the crew.

April 5th	"Campania"		Prior to arrival here, a seaman had been landed at Weymouth suffering from smallpox, and subsequently the captain was removed to hospital at Swansea suffering from smallpox.	Disinfection at Weymouth and Swansea	Re-vaccinated 2 of the crew at Swansea.
		New York	Brought a passenger suffering from smallpox. Patient and attendant removed to Fazakerley Hospital.	Disinfection.....	Re-vaccination.
September 29th...	"Activo"	Bilbao.....	Mess-room boy discovered ill on board and showing signs of smallpox. On medical examination the boy was removed to Priory Road Hospital.	Disinfection.....	Re-vaccinated 25 of the crew.
November 16th...	"Loughrigg Holme"	Salonica, via Gibraltar.....	Visited in river on arrival as a result of intimation received that a steward had been left in hospital at Gibraltar suffering from smallpox.	Disinfection.....	
			Two days after arrival the 2nd officer was found to be suffering from smallpox. The patient and two contacts were removed to New Ferry Hospital, where one of the contacts subsequently developed smallpox.	Disinfection.....	Re-vaccinated 8.

Under the routine practice, whenever a case of smallpox is notified (often by telephone) the patient is at once removed to hospital, the house is disinfected throughout, and the bedding and clothing removed to the Disinfecting Station the same day. The following day the rooms are stripped of wall paper, which is removed and burnt. Special Inspectors, experienced in the work, visit the houses to ascertain precise particulars as to the vaccination of the inmates, visitors, and neighbours, and also endeavour to find out all the persons who have been in contact with the patient. Notice is sent to the Vaccination Officer that the case has occurred, and full particulars of all contacts are also sent to him. If any persons living in other towns have visited the patient, information is at once sent to the Medical Officer of the district. Notice is sent to the school attended by the children (if any), precluding their further attendance.

A special effort is made to induce other inmates of the house who may be employed in large works or offices, &c., to be re-vaccinated. If they refuse, an intimation is sent to the employer that it is advisable for them to remain at home for 14 days.

The infected house is visited, and all contacts are visited every day for 14 days, and every few days after for another period of two weeks, to ascertain if any further sickness occurs; and if any ailment is reported, word is sent to the office, and the Assistant Medical Officer visits the sick person.

When a case occurs in a court-house or similar insanitary premises, the other inmates are removed to the City Hospital for isolation and re-vaccination. They can usually be persuaded to go.

A special staff is engaged exclusively in the prevention of smallpox.

The following details of an outbreak at No. 30, B—— Street, illustrate the methods adopted and the difficulties to be met.

The premises in question are used as a common lodging-house, registered for 147 lodgers, with a public cocoa room on the ground floor. The lodging-house is often used by cattlemen coming from the United States. Early in January some cattlemen coming from the ss. "Kansas" stayed at this house and returned to America on January 4th. The "Kansas"

had 2 cases of smallpox on board on the outward voyage. On the 20th January 2 men who had for two weeks previously been staying at 30, B—— Street, were removed from the Workhouse with smallpox. The premises in B—— Street were disinfected and kept under observation. On the 25th of January information was received from Dr. Tattersall, of Salford, that a cattleman ex the “Lancastrian” had been staying at 30, B—— Street, and then had gone to Salford and had developed smallpox. On 3rd February 5 men at 30, B—— Street, were discovered by the inspector to be ill; they were removed to hospital, and the illness developed into smallpox. All of these men had refused vaccination, mostly on the ground that it would interfere with their work. About 12 men who had been in close contact were removed for isolation. On the 4th February the premises were closed to new-comers, and no further lodgers taken, there being 85 lodgers left in the house, and it was desired not to take any step which might lead to these lodgers leaving the house. Dr. Griffiths vaccinated 71 of the lodgers on the 4th and 5th February, but 13 others refused to be done, as they thought it was likely to interfere with their work. The men who were vaccinated were paid at the rate of £1 per week whilst they remained isolated in the lodging-house. These payments commenced on the 5th and ended on the 15th February. The premises were visited each morning, also during the day, and late in the evening, when all the lodgers were in, by the special smallpox inspectors, to ascertain if there was any further illness in the house.

On 5th February a man named Devaney was found at the North Dispensary suffering from smallpox. He was removed to hospital. This man gave his address as 23, S—— Street, a lodging-house; but it was ascertained that he had been staying at 30, B—— Street until February 3rd, and had no doubt contracted the disease there. At the house in S—— Street all but two, who refused, were re-vaccinated, and paid at the rate of £1 per week for 10 days. No further cases occurred at this house, and no cases occurred amongst the persons who had been exposed to infection at the North Dispensary, all of whom had been kept under close observation, many being re-vaccinated.

On Sunday, 9th February, the Inspector, on visiting 30, B—— Street, found all the men well. He went again at 11 p.m., and found Stephen Maloney was not well. He was forthwith removed to hospital, and developed smallpox. This man had been re-vaccinated on the 5th inst., too late, it will be seen, to be of use.

On the following Sunday, 16th February, at 10-30 a.m., John Rock was found to be sick. This man had no primary vaccination marks. He had been vaccinated on the 5th inst., but developed the disease six days after in a mild form.

Early on the morning of the 19th February the inspector on his visit found two men—Daniels and McConnell—to be sick. They were at once removed to hospital, where the disease proved to be smallpox. These two men had refused to be re-vaccinated. On March 8th an exceedingly mild case, probably dating from March 1st, but which had been concealed, was removed, and again on March 11th another case. Both of these had refused re-vaccination.

After the removal of each case disinfection was carried out, and a large quantity of the bedding in this lodging-house was destroyed, and compensation paid to the owner.

The number of persons who were re-vaccinated at this house was 85 (71 lodgers and 14 of the staff).

None of these took smallpox.

Thirteen refused to be vaccinated, and nine of them were removed to hospital with smallpox. Two other lodgers refused to be vaccinated at first, but were afterwards vaccinated. This was done too late, and they also developed smallpox.

On the 19th February a case of smallpox was notified as existing at No. 39, D—— Street, the patient being a lodger. The usual information was sought, and the persons who were ascertained to have been in contact with the patient were reported for re-vaccination and kept under observation.

After some days had elapsed, the inspector found out that two other persons had been in contact—a Mrs. Brown, of 35, H—— Street, and Mrs. Lanham, of No. 9, A—— Road. Visits were made to these addresses, and the Public Vaccinator informed; the latter person was re-vaccinated by the Public Vaccinator. The Public Vaccinator also called at No. 35, H—— Street, in order to re-vaccinate Mrs. Brown, but by that time the house was found to be empty, the occupier having removed. Enquiries were at once made as to where she had gone to,

but it was only after several days that she was found to be living at No. 96, A—— Street, Walton. Information was at once sent to the Public Vaccinator, and she was found and re-vaccinated by him on the 7th March. Daily visits were made to the house, with the result that on the morning of the 9th March she was found to be suffering from smallpox.

The foregoing record shows conclusively that the difficulties in dealing with smallpox are largely owing to defects in legal powers to ensure efficient protection by vaccination. It is no doubt true that in cases of limited importation, or in cases in which the infected person has by chance only been in contact with the vaccinated, it has been possible to effectually isolate infected persons, and by unceasing watchfulness to track out those who have been exposed to infection and by persuasion, by bribery, or by other means, to induce those persons who have been exposed to infection to submit to re-vaccination, and so the outbreak has terminated; but this is by no means always possible.

It is only necessary to cite the instances of those persons who, whilst actually suffering from smallpox, possibly without being aware of the nature of the illness, have pursued their avocations, or have gone to various entertainments, riding in tramcars, &c., to show how impossible it is to trace everybody who is exposed to infection. Moreover, the linen of these people has been sent to the usual laundry, and articles they have handled have been sent to the homes of customers.

Nurses, doctors, laundrymaids and servants at the Smallpox Hospital in Liverpool are rendered immune from smallpox by efficient vaccination. No one can doubt that if the general public were as efficiently vaccinated as the hospital staff, they would be equally immune from smallpox, and it is indeed remarkable that there is no legal provision to ensure protection of this character for the people.

Including the imported cases there was a total number of 560 cases notified. They were all, with one exception (a baby aged 2 months, who died before the case was notified), isolated in hospital.

There were 20 deaths during the year, 18 being residents and 2 non-residents (tramps).

Of the fatal cases 7 were unvaccinated and 13 vaccinated, some very imperfectly.

Not less than 80,000 persons (other than infants below six months of age) have been vaccinated or re-vaccinated in Liverpool during the last 12 months; a result largely owing to the highly creditable manner in which the Press, Ministers of Religion, Teachers, Employers, Medical men, and others have stimulated the interest of thinking people in the subject.

The working of the Vaccination Acts, and the circumstances attending outbreaks of small-pox in different parts of the country during the last five years have been carefully noted. Some valuable lessons have been taught, and, during the period in question, Liverpool has been subject to many importations of small-pox, which have brought to light defects in the means of dealing with the disease which amendments in the Vaccination Acts would remove.

Public opinion in Liverpool is strongly favourable to vaccination, perhaps because in a great seaport town the dangers from small-pox are greater than in other places, and also because of the injury done to the commerce of the port by any unusual prevalence of disease.

Be it as it may, the measures taken in connection with the recent outbreak have brought a volume of correspondence from employers of labour and others mixing largely with the people, all expressive of the desire that facilities should be given to promote vaccination and re-vaccination.

One of the most obvious needs in the suppression of a threatened outbreak of small-pox is promptness of action; a few days, even a few hours, may make all the difference between the suppression and the extension of the disease. Coincidental with the removal of the patient and the necessary disinfection, re-vaccination of all contacts should be proceeded with.

This necessity for avoiding loss of time points at once to the need of such administrative arrangements as will enable action to be taken with the least possible delay. The body which receives the first notice of the existence of small-pox, and whose duty it is to apply every other preventive measure, is the authority which should be armed with powers to apply what in great towns is practically the only effectual measure—namely, vaccination or re-vaccination, for without such the disease cannot be coped with. If there is delay here the usefulness of all the other

measures is crippled. When communications have to be sent through a subordinate officer of another body, to be in turn communicated by him to the executive officer of that body, delays are absolutely unavoidable, however efficient the officers concerned may be.

It is a strange anomaly that a body charged with the protection of the public health, and with the care of all classes of society, irrespective of wealth or poverty, should not have in its hands power to apply the only means of prevention of a form of disease which is notoriously liable to attack any person, no matter what his social condition may be. It is even stranger that these protective measures should be available only through a department charged with the relief of the destitute—viz., the guardians of the poor. It is no reflection either upon the guardians or upon their officers, the great majority of whom have discharged their duties faithfully and well, to say that serious inconvenience and delay have arisen from this sub-division of the preventive measures in regard to small-pox. But so foreign is the duty of the destitution authority to the protection of health that in one particular instance the employés of a large firm flatly refused to be re-vaccinated by the public vaccinator because they had a notion that the operation performed by the public vaccinator would be regarded as equivalent to some form of relief from the guardians of the poor.

The sanitary authority provides the ambulance, hospital, and disinfecting staff, it makes all inquiries in tracing infection and communicating names and addresses of contacts to employers, schoolmasters, other sanitary authorities, &c., and, in fact, it takes up every detail in connection with the suppression of the outbreak, excepting the most efficient one, viz., vaccination.

Difficulty arises from the fact that the vaccination staff is not a part of the staff of the sanitary authority. The principal objection to such an arrangement appears to be that there are instances in which the

boards of guardians are really larger bodies than the sanitary authorities. This difficulty would be overcome if in the future the large supervising sanitary authorities—viz., County Councils and County Boroughs—were made the vaccinating authorities.

There is, of course, an alternative to this—that the whole of the vaccination staff should be transferred to a special department of the Local Government Board. In any case, it will be clearly understood that the transfer either to the sanitary authority or to the Local Government Board would not, *per se*, involve any loss of office or emolument to any man.

It is a defect in the Act, a minor defect, no doubt, that the vaccination officer himself receives neither fee nor reward for all the work which falls to his share in connection with the prompt and efficient discharge of the duties involving re-vaccination which fall upon him.

A further important matter is the desirability of making provision for a suitable and adequate supply of lymph; in order to meet this, depôts should be established under Government control and supervision in various parts of the country, where lymph would be manufactured and where it could be obtained. As an instance, I would quote the depôts in connection with the Liverpool Bacteriological Laboratories. The usefulness of places such as these would be added to if it were known that they had the ægis of Government supervision. The same remark applies to all private stations in which lymph is prepared, many of which are undoubtedly good and efficient.

Yet another point which must not be lost sight of is the question of maintaining vaccination stations.

It is quite easy to conceive of circumstances in which vaccination stations would be exceedingly useful, and their establishment might be left to the option of the sanitary authority.

Perhaps the most important matter for consideration is the question of provision for re-vaccination.

Re-vaccination at the public expense should be available for every child during the twelfth year of its life, but in exceptional circumstances, such as the presence of small-pox or exposure to small-pox, this age limit should be reduced. It should rest with the sanitary authority, who presumably would be guided by their medical officer of health, to prescribe the reduced limit.

Apart from this systematic re-vaccination, it is imperative that all persons who have been in direct contact with small-pox should be required under penalty to be vaccinated or re-vaccinated within forty-eight hours, unless recent successful performance of the operation renders this unnecessary.

This will not be easy to carry out, and there would be cases in which it would be impossible to do so—such, for example, as those cases in which the fact of exposure is not known; but, nevertheless, such an obligation would result in good, even by drawing attention to the necessity for it. It would apply to lodgers in a common lodging-house, and with especial force to tramps and vagrants who should be liable to re-vaccination at every tramp-shed and vagrant-ward into which they seek admission. Further, no prisoner, especially a short-service prisoner, should be discharged from gaol without being re-vaccinated, unless in the opinion of the gaol surgeon the operation is unnecessary.

There is a very valuable clause in the Liverpool Corporation Act, 1902, to the following effect:

“ 1. The occupier of any building in the city which is used for human habitation, and in which there is or has been any person suffering from a dangerous infectious disease, shall, on the application of the medical officer of health, or the deputy or assistant medical officer of health for

the city, at any time during the illness of such person, or within six weeks from the occurrence of such illness, furnish such information within his knowledge as the medical officer of health, or the deputy or assistant medical officer of health, may reasonably require for the purpose of enabling measures to be taken to prevent the spread of the disease.

“2. Any occupier refusing to furnish such information, or knowingly furnishing false information, shall be liable on summary conviction to a penalty not exceeding forty shillings.”

With regard to the Conscientious Objector Clause under the present Vaccination Act, there are few conscientious objectors in Liverpool—certainly not more than 1 in 10,000; and whilst we feel sorry for the child of the conscientious objector, yet the reasons given for the clause by the Royal Commission are good, and it may really result in increasing vaccination.

The clause relative to the keeping of a record of patients needs amendment. To begin with, the record cannot be kept by the clerk, but must be kept by the physician. It should show not only the age, the condition of the patient as to vaccination, but also the character as to severity, etc., of the illness from which he suffered. The objection to the clause is that persons' names and addresses are set out, their homes subsequently visited, and the fact of their having had small-pox exposed and advertised in a manner prejudicial to the interests of those people, and prejudicial also to the general public interests.

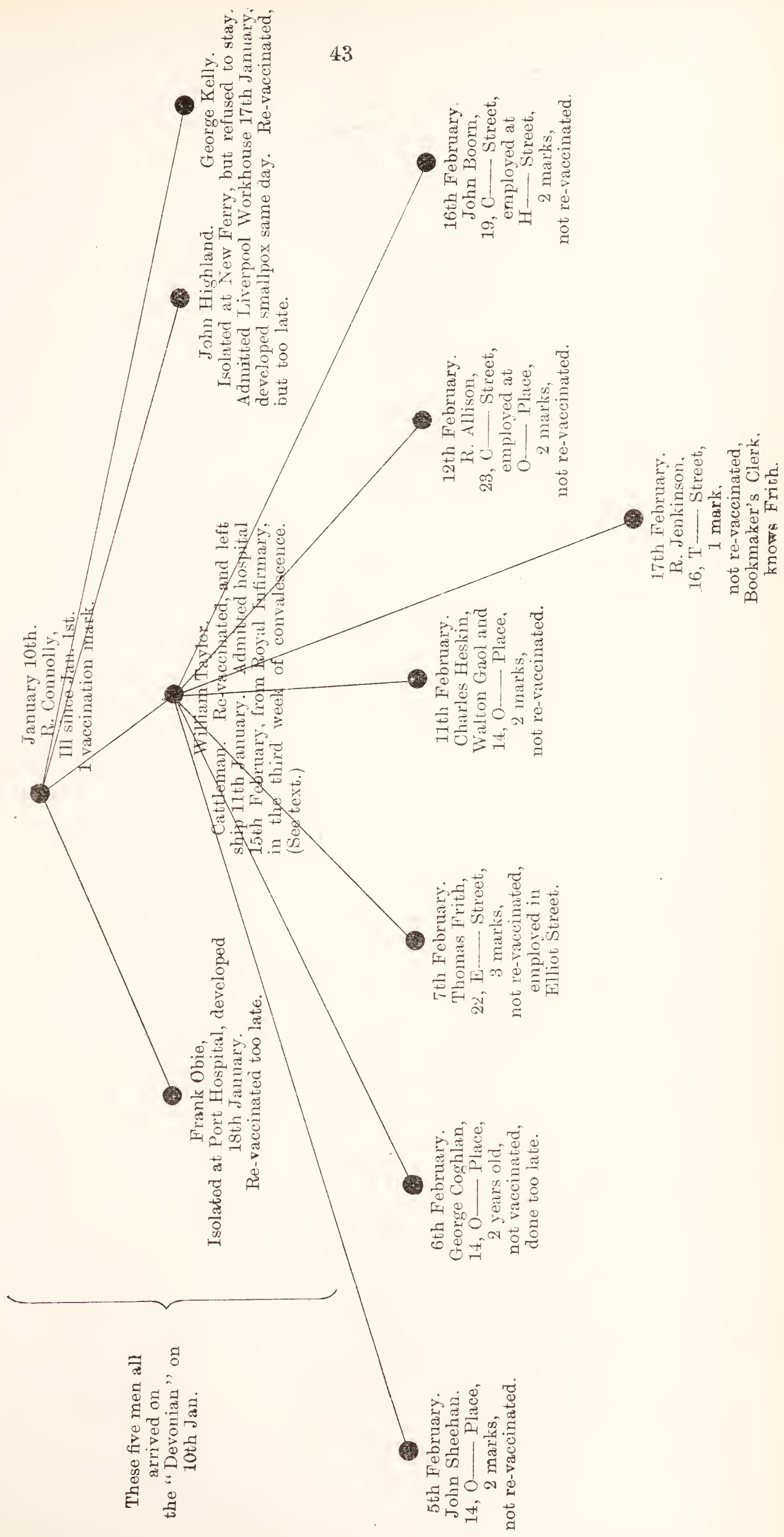
GROUP 1.

S.S. "Devonian" arrived from Boston on 7th December, 1901.
Reported all well.

NOTE.—Unless otherwise stated, the dates indicate the date of report, and not the commencement of the illness.

1901. 12th December.	●	R. Smethurst, fireman, lodger at 129, S—— D—— Road. Not re-vaccinated.
27th December.	●	John Taylor, son of tenant of 129, S—— D—— Road, 3 marks. Evaded re-vaccination by going to another address. Rode in tramcars, and went to football match, with the rash out.
1902. 12th January.	●	Helen Hanlon, 15, R—— Street. One vaccination mark.
23rd January.	●	John Hanlon, 15, R—— Street. Re-vaccinated too late.

S.S. "Devonian" arrived from Boston on January 10th, 1902,
with a case of small-pox on board.



GROUP 3.

S.S. "Kansas" left Liverpool on January 4th, 1902. Had two cases of small-pox on outward voyage to Boston.

Some of the Cattlemen from this ship stayed at 30, B—— Street during the first week in January.

25th January, Salford.
A sailor, on the "Lancastrian," stayed at 30, B—— Street two nights, then went to Salford and developed small-pox.

28th January.
Albert Ashley,
inmate of Workhouse,
3 marks.
Not re-vaccinated.

31st January.
H. Mansen,
inmate of Workhouse,
2 marks.
Not re-vaccinated.

31st January.
R. Davies,
inmate of Workhouse,
3 marks.
Not re-vaccinated.

January 20th.
James White, 1 mark.

Daniel Burke, 1 faint mark.

Both these men took ill about 15th January. Had been staying at 30, B—— Street, but were removed from Liverpool Workhouse.

3rd February.
30, B—— Street.
C. Connor.....2 marks.
W. Girling2 "
L. Dixon2 "
R. Bernard2 "
W. Toole1 "
These men had refused
to be re-vaccinated.

5th February.
J. Devaney.
23, S—— Street.
1 mark, not re-vaccinated.
Stayed at 30, B——
Street until February 3rd.

9th February.
Stephen Maloney,
30, B—— Street,
2 marks.
Re-vaccinated too late.

16th February.
John Rock,
30, B—— Street.
Vaccination doubtful.
Re-vaccinated too late.

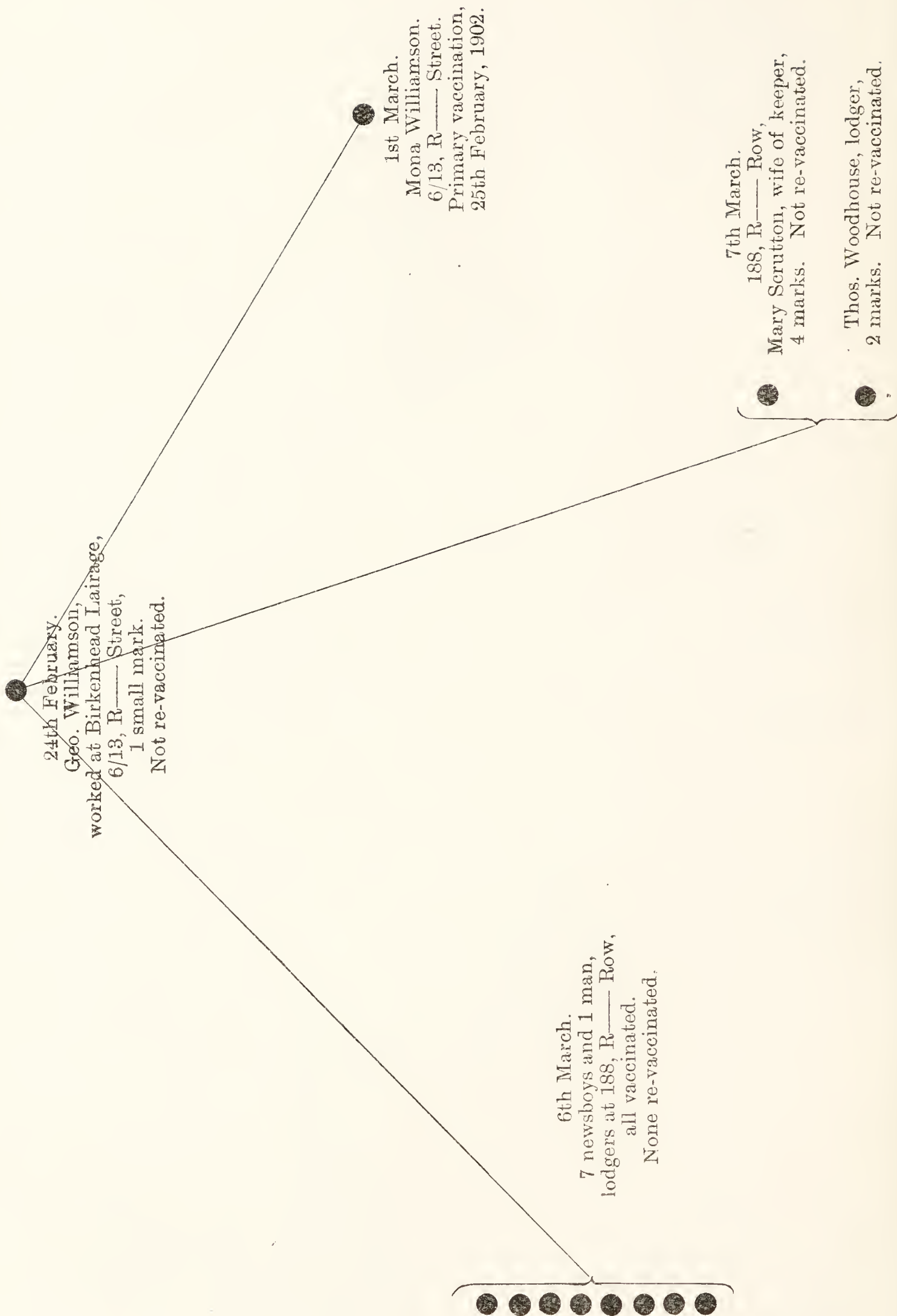
20th February.
Joseph Maher,
131, F—— Street.
1 small mark.
Not re-vaccinated.

19th February.
30, B—— Street,
Thos. Daniels.
One mark each. Both refused to be re-vaccinated.

8th March.
John Johnson,
30, B—— Street,
3 good marks.
Refused re-vaccination.

11th March.
30, B—— Street.
William Barnett,
2 marks.
Refused re-vaccination.

GROUP 4.



*Note.—Upwards of 50 persons were found in B—— Street who had never been vaccinated. Information was given to the Vaccination Officer.

20th February.
A man stayed at 68, D—— Road. Being ill, he walked into Bootle Police Station. Was removed to hospital with smallpox.

7th March.
24, C—— Street,
Ann J. Flynn, 2 marks.
Not re-vaccinated.
Been cleaning at 68,
D—— Road.

*3rd March.
84, B—— Street,
William Hinks,
not vaccinated,
stayed at 68, D—— Road
one night.

GROUP 6.

21st February.
39, D—— Street
(Lodging House).
Charles Gardner.
3 marks, not re-vaccinated.
Other inmates refused re-
vaccination.

5th March.
39, D—— Street.
Henry Harvey.
5 marks, refused re-vac-
cination.

9th March.
96, A—— Street.
Mrs. Brown.
Re-vaccinated two days
prior to developing small-
pox; been visiting No. 39,
D—— Street.

10th March.
4/1, St. A—— Street.
Ellen Garvey.
Been working at No. 39,
D—— Street

11th March.
39, D—— Street.
James Bennett, 1 mark.
Charles Guest, 2 marks.
Both these men had re-
fused re-vaccination.

GROUP 7.

21st February.
15, B—— Street.
Edward Conroy, 3 marks.
Arrived London on s.s.
"Ulunda." Smallpox dur-
ing voyage, but was not re-
vaccinated.

7th March.
8/2, S—— Street.
Mary J. Doolan.
Unvaccinated.

GROUP 8.



SMALLPOX.

The next tables show the incidence of smallpox in regard to season and locality, and the ages at death of the fatal cases.

DISTRICTS.	QUARTERS.								YEAR.		
	March.		June.		Sept.		Dec.				
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total.
Scotland.....
Exchange	1	...	...	1	...	...	1	1	2
Abercromby
Everton	1	...	...	...	...	4	2	4	3	7
Kirkdale.....	2	1	...	1	2	2	4
West Derby (West)	2	...	1	...	3	3
Toxteth	1	...	...	...	1	...	1
Walton	1	...	...	...	...	...	...	...	1	1
West Derby (East)
Wavertree
Sefton Park
(late Toxteth Rural).											
Garston
Hospitals (Residences outside the City)	1	...	...	...	1	...	2	...	2
City.....	...	2	2	...	3	4	5	4	10	10	20

AGES AT DEATH.													
Under 1 year.	1—	2—	3—	4—	5—	10—	15—	20—	30—	40—	50—	60—	All Ages.
2	...	...	2	...	...	1	1	3	6	5	...	...	20

Deaths in Public Institutions are transferred to the Districts from whence the patients came.

SMALL-POX DURING THE LAST FORTY YEARS.

Years of Increase.	No of Cases.	Deaths.	Years of Subsidence.	No of Cases.	Deaths.
1863	Unrecorded	100			
1864	„	482			
1865	„	459			
1866	„	102			
			1867	Unrecorded	22
			1868	„	18
			1869	„	20
1870	„	174			
1871	„	1,919			
1872	„	50			
			1873	„	10
			1874	„	30
			1875	„	29
1876	„	386			
1877	1,660	299			
			1878	35	3
			1879	12	..
			1880	14	2
			1881	262	34
			1882	67	6
			1883	126	26
1884	832	106			
			1885	375	46
			1886	234	29
			1887	23	1
			1888	27	1
			1889	9	1
			1890	2	..
			1891	21	2
			1892	177	13
			1893	75	9
			1894	229	20
			1895	130	12
			1896	8	..
			1897	6	..
			1898	17	2
			1899	10	1
			1900	156	23
			1901	37	6
1902	560	20			

TYPHUS FEVER.

Cases of typhus have gradually diminished as sanitary administration has become more precise, and during 1902 the number of cases was 155.

The disease is particularly liable to spread amongst dirty, ill-fed, and intemperate persons, and incessant watchfulness is necessary in order to hold it in check. (See page 131.) The disease almost always attacks the children of the family first; in them the symptoms are obscure, and are often unrecognised until adults succumb.

Of the total number of 155 cases, 25, as the table shows, resulted fatally, the majority of the deaths taking place during adult age, the period when the disease is most fatal.

AGES AT DEATH.											
Under 1 year.	1—	2—	5—	10—	15—	20—	30—	40—	50—	60 & up- wards.	All Ages.
—	—	1	—	2	4	3	9	4	1	1	25

Reports for preceding years sufficiently illustrate the importance of the daily visits which are made to houses which have been infected with typhus fever, as well as the importance of keeping under supervision every person who is known to have been in contact with the patient. It is not necessary to allude to this at present, further than to say that none of the stringent measures which have been adopted against typhus are in any way relaxed.

The number of deaths during each of the preceding seven years have been as follows :—24, 36, 23, 19, 13, 11 and 14.

List of streets in the city where cases of TYPHUS FEVER occurred
during the year 1902.

STREETS.	Cases.	Deaths.	STREETS.	Cases.	Deaths.
Alexander Pope	1	...	Kew	3	1
Arkwright	1	1	Leeds	1	...
Ashfield	5	1	Leslie	1	...
Beau.....	3	...	Limekiln Lane	3	1
Beatrice	1	...	Mile End.....	1	...
Blair.....	1	...	Orry	1	...
Blenheim	6	...	Pembroke Road	1	1
Bond	2	1	Penrhyn	3	...
Bostock	1	...	Plumpton	1	1
Bute	1	...	Prince Edwin.....	1	...
Back Lime	1	...	Raymond	3	...
Burlington	15	3	Sharp	4	...
Burroughs Gardens	1	...	Silvester	1	...
Caryl	1	1	St. Anne	1	...
Christian	1	1	Tatlock	4	...
Dryden	1	...	Titchfield.....	1	...
Eldon	1	...	Vauxhall Road	1	...
Elias	1	...	Vescock	2	...
Evans	2	...	Virgil	5	...
Evelyn	1	...	Walton Workhouse	1	...
Gerard.....	1	...	(Nurse)		
Haddock	2	2	Wellington	1	...
Heathcott	1	...	Whitley	2	...
Hornby	60	9	Steamship	1	...
Kempston	1	...	*Netherfield Hospital .....	...	2

*From Lyons Street, Bootle.

TYPHOID FEVER.

There were 1,026 cases of Typhoid Fever reported during the year, against 864 in the preceding year, and the deaths from the disease were 190, being 36 in excess of the preceding year.

Upwards of 66 per cent. of the total number of cases notified during the year were removed to hospital. (See page 212.)

The following table gives the ages at death of the fatal cases:—

AGES AT DEATH.											
Under 1 year.	1—	2—	5—	10—	15—	20—	30—	40—	50—	60 & up- wards.	All Ages.
1	—	10	14	22	19	41	39	27	14	3	190

The deaths during each of the preceding seven years have been as follows:—197, 166, 145, 148, 182, 120 and 154.

Table showing the locality and season of deaths from Typhus Fever, Typhoid Fever, and the obscure form of disease known as Continued Fever during the year 1902. Under this latter name, three deaths were registered, one less than last year, and one below average of the last five years. (See also page 78).

DISTRICTS.	1st Quarter.				2nd Quarter.				3rd Quarter.				4th Quarter.				YEAR.			
	Typhus.	Typhoid.	Simple Continued.	Total.	Typhus.	Typhoid.	Simple Continued.	Total.	Typhus.	Typhoid.	Simple Continued.	Total.	Typhus.	Typhoid.	Simple Continued.	Total.	Typhus.	Typhoid.	Simple Continued.	TOTAL.
Scotland.....	—	2	—	2	1	1	—	2	7	5	—	12	8	5	—	13	16	13	—	29
Exchange	—	4	—	4	—	4	—	4	—	4	—	4	1	3	—	4	1	15	—	16
Abercromby	—	2	—	2	—	2	—	2	—	4	—	4	—	8	—	8	—	16	—	16
Everton	—	6	—	6	—	3	—	3	1	9	—	10	1	11	—	12	2	29	—	31
Kirkdale.....	1	3	—	4	2	2	—	4	—	7	—	7	—	5	—	5	3	17	—	20
West Derby (West)	—	7	—	7	—	7	—	7	—	8	—	8	—	3	—	3	—	25	—	25
Toxteth	—	10	—	10	—	8	1	9	1	5	1	7	—	9	—	9	1	32	2	35
Walton	—	—	—	—	—	4	—	4	—	5	—	5	—	3	—	3	—	12	—	12
West Derby (East)	—	3	—	3	—	2	—	2	—	2	—	2	—	2	—	2	—	9	—	9
Wavertree	—	2	—	2	—	1	—	1	—	1	—	1	—	1	—	1	—	5	—	5
Sefton Park	—	3	—	3	—	1	—	1	—	1	—	1	—	—	—	—	—	5	—	5
(late Toxteth Rural)																				
Garston	—	1	—	1	—	—	—	—	—	—	—	—	—	3	—	3	—	4	—	4
Hospitals (Residences out of City)	—	—	—	—	2	1	—	3	—	4	—	4	—	3	—	3	2	8	—	10
TOTAL FOR WHOLE CITY ...	1	43	—	44	5	36	1	42	9	55	1	65	10	56	—	66	25	190	2	217

In arranging this table, all deaths occurring in hospitals have been transferred to the districts from whence the patients came.

SCARLATINA.

Want of hospital accommodation (page 210) goes far to explain the increase in the number of cases of scarlet fever.

The reduction in the number of cases of this disease which had been noted in 1900, ceased immediately the removal of patients to hospital was stopped. In only 53·4 per cent. of the cases was removal possible, and out of a total of 5,914 cases reported, only 2,962 were removed to hospital, showing a proportion of cases isolated about 7 per cent. lower than in 1900, and 1 per cent. lower than in 1901. The percentage of the total number of scarlet fever patients removed to hospital during each of the preceding seven years has been as follows:—38·3, 44·3, 54·6, 60·5, 63·6, 60·8 and 54·8. The public appreciation of the value of isolation is well established, and the inability to find accommodation for the sick was very much felt.

The mortality from the disease reached 5·4 per cent., the great majority of the deaths being below five years of age. (See table, page 57.)

The total number of deaths was 318, against 195 last year, and an average of 170 during the preceding five years.

DEATHS FROM SCARLATINA.

DISTRICTS.	QUARTERS.								YEAR.			
	March.		June.		Sept.		Dec.					
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total.	
Scotland	5	4	5	7	4	3	3	2	17	16	33	
Exchange	2	2	3	2	1	3	4	4	10	11	21	
Abercromby	2	1	1	...	3	1	1	2	7	4	11	
Everton	6	8	3	8	14	10	18	7	41	33	74	
Kirkdale	4	3	7	4	5	8	5	6	21	21	42	
West Derby (West)	3	2	3	1	3	1	8	4	17	8	25	
Toxteth	3	5	3	5	5	7	9	5	20	22	42	
Walton	7	7	3	3	3	3	5	4	18	17	35	
West Derby (East) .....	...	3	4	...	...	2	...	...	4	5	9
Wavertree	4	1	...	1	...	...	2	1	6	3	9
Sefton Park .....	...	...	...	...	1	1	2	2	3	3	6
(late Toxteth Rural)												
Garston .....	...	...	...	...	...	...	1	2	1	2	3
Hospitals (Residences outside												
the City) .....	...	1	1	1	...	...	2	3	3	5	8
City	36	37	33	32	39	39	60	42	168	150	318	
AGES AT DEATH.												
Under 1 year.	1—	2—	3—	4—	5 —	10—	15—	20—	30—	40—	50—	All Ages.
16	36	56	55	45	85	8	5	6	3	1	2	318

Deaths in Public Institutions are transferred to the Districts from whence the patients came.

MEASLES.

Measles showed an increase as compared with the preceding year, the cases reported reaching 7,141, as against 6,766 in 1901 and 2,372 in 1900. There were 334 deaths directly ascribed to it, the great majority of them being of infants below 3 years of age.

The number of deaths does not fully indicate the destruction of life due to measles, since this disease is commonly associated with bronchitis and pneumonia, and it is beyond any question that deaths primarily due to measles are entered in the returns as due to pulmonary disease.

During the year, with a view to prevent extension of measles, it unfortunately became necessary to resort to the closure of a considerable number of schools. This necessarily involves a break in the work of the schools, but the action puts an effectual check upon the sickness. (See pages 129 and 130.) The isolation of the infectious sick in hospital is important and necessary. No provision of hospital accommodation, except for a very limited number of cases, has yet been made for measles, and the deaths from measles show no decline comparable to that which has taken place in the forms of infectious disease for which hospital accommodation is available. In the great number of homes in which measles occurs isolation in the house is difficult or impossible. In making arrangements for hospital isolation of measles, difficulties of a special kind will arise owing to the tender age of the patient, and the peculiarities of the infection in this form of disease.

The following table shows the periods of the year and the localities in which deaths from Measles occurred, and also the ages at death.

The number of deaths from Measles during each of the preceding seven years, 1895-1901, has been as follows:—398, 312, 344, 283, 321, 150 and 473.

DISTRICTS.	QUARTERS.								YEAR.		
	March.		June.		Sept.		Dec.				
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total.
Scotland .....	...	...	4	...	3	6	13	18	20	24	44
Exchange .....	...	...	2	...	1	1	13	13	16	14	30
Abercromby .....	...	...	1	...	...	...	16	10	17	10	27
Everton .....	...	...	7	7	7	1	17	23	31	31	62
Kirkdale .....	...	...	1	3	5	4	7	9	13	16	29
West Derby (West)	1	...	2	...	1	1	13	15	17	16	33
Toxteth .....	...	1	2	1	5	4	36	22	43	28	71
Walton .....	...	...	2	3	1	5	2	1	5	9	14
West Derby (East).....	...	...	...	1	1	...	4	1	6	1	7
Wavertree .....	...	...	...	...	...	...	3	4	3	4	7
Sefton Park..... (late Toxteth Rural)	...	...	...	...	...	...	2	...	2	...	2
Garston.....	...	1	...	...	...	...	...	...	...	1	1
Hospitals (Residences outside the City)	1	...	...	...	...	...	3	3	4	3	7
City	2	2	21	15	24	22	129	119	177	157	334

AGES AT DEATH.												
Under 1 year.	1—	2—	3—	4—	5—	10—	15—	20—	30—	40—	50—	All Ages.
62	142	55	30	19	23	3	...	...	...	...	...	334

Deaths in Public Institutions are transferred to the Districts from whence the patients came.

WHOOPING-COUGH.

Whooping-cough showed a considerable increase as compared with the preceding year. This disease is one of the most distressing and painful causes of death in very early life. A large number of deaths certified to be primarily due to diseases of the lungs are found on inquiry to have originated in whooping-cough. The great majority of the deaths occur below two years of age, and nearly one-half below twelve months of age. It is plain from this circumstance that isolation of the infected infant in hospital presents many difficulties. In a large proportion of cases the patient would have to be accompanied by the mother, and the period of detention in hospital would in the majority of cases be protracted. During last year 407 deaths were directly attributed to whooping-cough, but this figure is by no means a complete representation of the mischief caused by it.

Notwithstanding the difficulties in the way, some means of isolation will have to be found for the infected children, and some lessening of this disease may then be expected with confidence. Experience has repeatedly shown that the introduction of a case of whooping-cough into a court has resulted in the infection of practically the whole of the infant population in the court.

The following table shows the periods of the year and the localities in which deaths from Whooping-cough occurred, and also the ages at death.

The number of deaths from Whooping-cough during each of the preceding seven years 1895-1901 has been as follows :—412, 298, 356, 333, 314, 538 and 166.

DISTRICTS.	QUARTERS.								YEAR.		
	March.		June.		Sept.		Dec.				
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total.
Scotland	7	11	4	6	2	7	2	4	15	28	43
Exchange	8	10	2	4	2	2	1	...	13	16	29
Abercromby	8	2	2	5	3	2	1	3	14	12	26
Everton	18	16	6	16	1	8	...	2	25	42	67
Kirkdale.....	3	7	11	10	5	7	2	2	21	26	47
West Derby (West)	6	10	9	8	3	7	1	1	19	26	45
Toxteth	21	10	21	9	1	5	1	5	44	29	73
Walton	2	1	10	4	2	5	1	1	15	11	26
West Derby (East)	6	6	3	3	...	1	2	2	11	12	23
Wavertree	2	3	2	3	...	2	...	1	4	9	13
Sefton Park	2	3	1	...	1	...	...	...	4	3	7
(late Toxteth Rural).											
Garston .....	...	...	1	...	1	...	...	...	2	...	2
Hospitals (Residences outside the City)	...	...	2	1	1	2	...	...	3	3	6
City	83	79	74	69	22	48	11	21	190	217	407

AGES AT DEATH.												
Under 1 year.	1—	2—	3—	4—	5—	10—	15—	20—	30—	40—	50—	All Ages.
163	130	51	31	20	12	...	...	...	...	...	...	407

Deaths in Public Institutions are transferred to the Districts from whence the patients came.

DIPHThERIA.

Deaths from Diphtheria attained their maximum during the first and fourth quarters of the year. Appended is a table showing the periods of the year and the localities in which the deaths from Diphtheria occurred, and also the ages at death.

The deaths during each of the preceding seven years have been as follows :—98, 120, 91, 123, 192, 143 and 158.

DISTRICTS.	QUARTERS.								YEAR.		
	March.		June.		Sept.		Dec.				
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total.
Scotland	3	...	1	2	1	1	2	3	7	6	13
Exchange .....	...	4	...	...	5	3	...	4	5	11	16
Abercromby .....	...	1	1	...	1	3	2	1	4	5	9
Everton	4	8	7	7	5	7	4	2	20	24	44
Kirkdale	2	4	1	1	1	1	1	1	5	7	12
West Derby (West)	1	2	1	3	2	...	5	4	9	9	18
Toxteth	6	3	4	3	2	1	...	2	12	9	21
Walton	2	4	6	1	...	1	2	3	10	9	19
West Derby (East)	3	1	1	1	1	2	...	1	5	5	10
Wavertree .....	...	...	2	1	1	1	...	...	3	2	5
Sefton Park .....	...	...	...	1	1	3	5	9	6	13	19
(late Toxteth Rural).											
Garston	3	...	...	2	...	...	1	3	4	5	9
Hospitals (Residences out- side the City).....	...	...	2	...	...	...	2	1	4	1	5
City	24	27	26	22	20	23	24	34	94	106	200

AGES AT DEATH.													
Under 1 year.	1 -	2 --	3 -	4 --	5 --	10 --	15 --	20 -	30	40 --	50	60 --	All Ages.
18	27	31	31	21	58	10	2	...	2	...	...	...	200

Deaths in Public Institutions are transferred to the Districts from whence the patients came.

CROUP.

The following table shows the periods of the year and the localities in which deaths attributed to Croup occurred, and also the ages at death. Twenty-two of the deaths were attributed to Membranous Croup, and nineteen to Croup.

DISTRICTS.	QUARTERS.								YEAR.		
	March.		June.		Sept.		Dec.				
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total.
Scotland .....	...	3	1	1	...	...	...	1	1	5	6
Exchange .....	...	...	1	...	...	...	1	...	2	...	2
Abercromby.....	...	...	...	...	...	...	...	...	...	...	...
Everton .....	...	2	4	...	2	1	...	...	6	3	9
Kirkdale .....	...	...	1	...	...	2	1	1	2	3	5
West Derby (West) .....	...	...	...	...	1	...	1	1	2	1	3
Toxteth	1	...	...	...	1	...	2	1	4	1	5
Walton.....	...	1	1	...	1	...	...	...	2	1	3
West Derby (East).....	...	...	1	1	...	...	...	...	1	1	2
Wavertree .....	...	...	...	...	...	...	1	...	1	...	1
Sefton Park .....	...	1	...	1	...	...	1	...	1	2	3
(late Toxteth Rural).											
Garston	1	...	...	...	...	...	1	...	2	...	2
Hospitals (Residences outside the City) .....	...	...	...	...	...	...	...	...	...	...	...
City	2	7	9	3	5	3	8	4	24	17	41

AGES AT DEATH.												
Under 1 year.	1—	2—	3—	4—	5—	10—	15—	20—	30—	40—	50—	All Ages.
3	15	6	8	3	5	...	1	...	...	...	...	41

Deaths in Public Institutions are transferred to the Districts from whence the patients came.

ZYMOTIC DIARRHŒA.

As is always the case, the mortality from diarrhœa chiefly affected infants, nearly three-fourths of the total number of deaths being those of infants under twelve months old. It commenced to increase about the end of July, and continued until October. Nearly 500 deaths were registered from it during this brief period, and to these must be added deaths from the closely-allied or identical disease, English cholera.

During the month of June, 1901, the Registrar-General issued an instruction which somewhat modified the registration of deaths attributed to diarrhœa. By this instruction gastro-enteritis was excluded from the diarrhœa column, but zymotic enteritis and epidemic enteritis were to be included under this column. The result of this would be a considerable increase in the number of deaths registered from diarrhœa.

Investigation proves incontestably that the deaths of infants from this cause are closely associated with the method of feeding, putrefying food being the medium by which the specific poison is commonly introduced. The deaths amongst children under three months of age, either wholly or partially fed on artificial foods, are fifteen times as great as they are amongst an equal number of infants fed upon breast milk; e.g., investigation has tended to prove that, out of every 1,000 infants under three months of age, naturally fed upon breast milk alone, 20 die of autumnal choleraic disease; but if the same number of infants, at the same age, are artificially fed, then, instead of 20 dying, as many as 300 will die from this cause.

The mortality is always highest in the season of decay; if the summer and autumn are wet and cool it is comparatively small, but a warm, dry season is invariably attended with a high mortality.

DEATHS FROM DIARRHŒA.

DISTRICTS.					QUARTERS.								YEAR.		
					March.		June.		Sept.		Dec.				
					M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total.
Scotland ...	...	...	...	2	2	7	6	38	28	12	15	59	51	110
Exchange	...	...	...	1	2	5	...	19	24	9	6	34	32	66
Abercromby	...	...	...	2	...	1	...	7	5	4	2	14	7	21
Everton ...	...	...	...	5	3	6	2	49	35	16	11	76	51	127
Kirkdale ...	...	...	...	2	1	1	2	34	19	8	4	45	26	71
West Derby (West)	...	...	...	...	1	1	...	18	18	6	6	25	25	50
Toxteth ...	...	...	...	3	2	1	3	39	25	9	9	52	39	91
Walton ...	...	...	...	1	...	...	...	12	11	4	4	17	15	32
West Derby (East)	...	...	...	...	...	...	1	9	2	2	1	11	4	15
Wavertree	...	...	...	1	1	...	...	3	4	1	...	5	5	10
Sefton Park (late Toxteth Rural)	...	...	...	...	...	...	1	4	1	1	2	5	4	9
Garston .....	...	...	...	...	...	...	...	5	2	...	...	5	2	7
Hospitals (Residences outside the City)	...	...	...	...	...	...	...	1	...	1	...	2	...	2
City	...	...	...	...	17	1	22	15	238	174	73	60	350	261
611															

AGES AT DEATH.													
Under 1 year.	1—	2—	3—	4—	5—	10—	15—	20—	30—	40—	50—	60 & up- wards.	All Ages.
416	128	17	14	2	5	...	1	2	...	3	5	18	611

Deaths in Public Institutions are transferred to the Districts from whence the patients came.

List of Streets in the City wherein Three or more Deaths from
Diarrhœa occurred during the year 1902.

STREETS.	No. of Deaths.	STREETS.	No. of Deaths.
Arkwright	4	Leyden	3
Ascot.....	3	Luther	3
Beatrice	6	Mann	3
Beaufort	6	Mansfield	3
Benledi.....	3	Newsham	3
Bond	6	Northumberland	3
Brassey	3	Park	3
Burlington	3	Peover	4
Christian	3	Prince Edwin	3
Christopher	3	Raymond	3
Cockerell	3	Robsart.....	3
Comus	3	Roscommon.....	3
Denison	3	Rose Vale.....	3
Dryden	3	Silvester	4
Field.....	3	Tatlock	4
Forth	4	Teulon	3
Gerard	3	Upper Beau.....	3
Great Homer	4	Victoria Square.....	4
Greenleaf	3	Virgil.....	3
Hornby.....	8	Wyatt.....	3
Latimer	6		

In arranging the foregoing list of streets, all deaths occurring in hospitals have been transferred to the streets from whence the patients were removed.

OTHER ZYMOTICS.

The following table indicates the localities in which deaths from other forms of zymotic disease occurred during the year :—

DISTRICTS.	Influenza.		Erysipelas.		Syphilis.		Rheumatic Fever.		Puerperal Fever.		Other Zymotics.		YEAR.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total.
Scotland	2	...	2	...	7	6	2	2	...	2	...	2	25
Exchange	3	5	3	2	6	8	2	...	...	1	6	1	37
Abercromby	2	2	...	4	2	2	4	2	...	1	...	2	21
Everton	7	4	5	4	3	8	2	7	...	2	2	2	46
Kirkdale	3	1	1	2	2	3	3	3	...	4	1	...	23
West Derby (West) ..	4	7	1	2	2	4	1	2	...	5	4	2	34
Toxteth	7	8	2	2	6	3	...	9	...	3	3	1	44
Walton	2	...	...	...	3	3	3	2	...	1	5	5	24
West Derby (East)...	1	3	...	1	1	...	1	1	...	4	1	...	13
Wavertree	1	3	...	...	...	...	...	...	...	1	2	...	7
Sefton Park..... (late Toxteth Rural)	1	...	1	3	...	...	2	1	...	1	1	...	10
Garston	2	...	...	...	...	1	...	4	...	1	...	1	9
Hospitals(Residences outside the City) ..	...	...	2	1	5	4	...	...	...	1	9	...	22
City	35	33	17	21	37	42	20	33	...	27	34	16	315

Deaths in Public Institutions are transferred to the Districts from whence the patients came.

THE FOLLOWING TABLE SHOWING THE ANNUAL AVERAGE NUMBER OF DEATHS FROM SIX OF THE PRINCIPAL ZYMOTIC DISEASES DURING EACH OF THE LAST THREE DECENNIAL PERIODS, IS INTERESTING AND INSTRUCTIVE. THE DECLINE IN THE MORE FORMIDABLE FORMS OF INFECTIOUS DISEASES IS VERY MARKED.

Years.	Small Pox.	Typhus.	Scarlet Fever.	Measles.	Whooping Cough.	Diarrhœa.
1866 to 1875	237·4	652·8	789·4	425·7	496·8	995·3
1876 to 1885	90·8	238·0	421·2	517·8	472·3	658·4
1886 to 1895	8·8	37·1	257·5	399·5	322·4	600·6
*1896 to 1902	7·4	20·1	194·4	316·7	344·5	1032·4

* Including extended City area.

ANNUAL AVERAGE NUMBER OF DEATHS FROM SIX OF THE PRINCIPAL ZYMOTIC DISEASES
DURING EACH OF THE LAST THREE DECENNIAL PERIODS, DISTINGUISHING THOSE
OF PERSONS ABOVE AND BELOW FIVE YEARS OF AGE.

YEARS.	SMALLPOX.		TYPHUS.		SCARLET FEVER.		MEASLES.		WHOOPING COUGH.		DIARRHŒA.	
	Above 5.	Below 5.	Above 5.	Below 5.	Above 5.	Below 5.	Above 5.	Below 5.	Above 5.	Below 5.	Above 5.	Below 5.
1866 to } 1875 }	141.7	95.7	*... *...	*... *...	187.7 601.7	14.4 411.3	9.9 486.9	105.7 889.6				
1876 to } 1885 }	62.5	28.3	*... *...	*... *...	137.0 284.2	35.4 482.4	18.6 453.7	61.9 596.5				
1886 to } 1895 }	6.2	2.6	† 33.2 † .7	† .7 † .7	87.6 169.9	28.3 371.2	15.1 307.3	60.2 540.4				
**1896 to } 1902 }	6.4	1.0	19.3 .8	.8 .8	59.4 135.0	18.7 298.0	12.1 332.4	61.4 971.0				

* During these years the ages at death from Typhus were not differentiated. † During the eight years, 1888-1895.
** Including extended City Area.

The following table shows the annual average death-rate, per 100,000 of the population, during each of the last three decennial periods, and during the seven years 1896-1902, from the undermentioned Zymotic Diseases :—

DISEASES.	1866 to 1875.	1876 to 1885.	1886 to 1895.	1896 to 1902.
Typhus	132·1	43·0	7·1	2·9
Small Pox	48·0	16·3	1·5	1·1
Scarlet Fever	159·9	76·2	49·6	28·6
Measles	86·1	93·6	77·0	46·7
Whooping Cough	100·5	85·4	62·1	50·8

TUBERCULAR DISEASES.

These diseases are associated with insanitary surroundings, and with conditions of life which tend to lower the general health. Improved sanitation is accompanied by a diminished mortality from these forms of disease, as the accompanying table, which relates to the last three decades, indicates :—

	1866 to 1875.	1876 to 1885.	1886 to 1895.	1896 to 1902.
Annual Average Death-rate per 100,000 of the population, at all ages, from all forms of Tuberculosis	430·8	349·8	309·8	253·5
Annual Average Death-rate per 100,000 of the population above 5 years of age from Phthisis ...	362·8	278·6	244·4	207·9
Annual Average Death-rate per 100,000 of the population below 5 years of age from : Tabes Mesenterica Hydrocephalus ... Scrofula	637·1	597·3	539·1	360·4

The Group of Tubercular Diseases includes Phthisis, Scrofula, Tabes Mesenterica, and Hydrocephalus. They occasioned 1,780 deaths in the City of Liverpool during the year 1902.

DEATHS FROM PHTHISIS.

The number of deaths from Phthisis during the year was 1,347. The number of deaths during each of the preceding seven years, 1895-1901 has been as follows :—1,305, 1,198, 1,220, 1,209, 1,313, 1,287 and 1,302.

DISTRICTS.				QUARTERS.								YEAR.		
				March.		June.		Sept.		Dec.				
				M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total.
Scotland...	...	...	...	21	17	14	11	12	12	17	16	64	56	120
Exchange	...	...	...	32	19	19	17	11	13	35	13	97	62	159
Abercromby	...	...	...	19	13	18	10	13	8	19	12	69	43	112
Everton	...	...	...	38	32	38	30	29	19	25	21	130	102	232
Kirkdale	...	...	...	17	13	15	16	13	9	20	13	65	51	116
West Derby (West)	...	...	...	34	29	23	18	26	11	23	8	106	66	172
Toxteth	...	...	...	17	25	26	19	23	18	14	29	80	91	171
Walton	...	...	...	9	10	10	6	8	7	8	7	35	30	65
West Derby (East)	...	...	...	13	6	5	5	2	6	6	7	26	24	50
Wavertree	...	...	...	6	...	3	6	6	2	5	2	20	10	30
Sefton Park (late Toxteth Rural)	...	...	..	1	2	4	6	3	2	8	3	16	13	29
Garston	.....			8	3	2	1	3	4	2	4	15	12	27
Hospitals (Residences outside the City)	...	...	...	13	4	7	8	9	7	10	6	39	25	64
City	...	...	...	228	173	184	153	158	118	192	141	762	585	1,347
AGES AT DEATH.														
Under 1 year.	1—	2—	5—	10—	15—	20—	30—	40—	50—	60 & up- wards.	All Ages.			
2	9	20	28	24	74	295	361	307	161	66	1,347			

Deaths in Public Institutions are transferred to the Districts from whence the patients came.

DEATHS FROM OTHER TUBERCULAR DISEASES.

Viz. :—Scrofula, Tabes Mesenterica, and Hydrocephalus.

DISTRICTS.					Scrofula.		Tabes Mesenterica.		Hydrocephalus.		YEAR.		
					M.	F.	M.	F.	M.	F.	M.	F.	Total.
Scotland	...	...	...	...	14	7	5	2	3	7	22	16	38
Exchange	...	...	...	...	14	6	10	6	2	1	26	13	39
Abercromby...		...	...	...	9	7	6	1	7	5	22	13	35
Everton	...	...	...	...	19	18	9	10	11	11	39	39	78
Kirkdale	...	...	...	...	16	5	3	4	9	4	28	13	41
West Derby (West)	...		...	...	14	3	15	11	9	8	38	22	60
Toxteth	...	...	...	...	12	11	8	4	5	5	25	20	45
Walton	...	...	...	...	2	4	6	4	3	...	11	8	19
West Derby (East)			...	...	6	3	...	2	...	5	6	10	16
Wavertree	...	...	...	...	2	3	7	6	3	3	12	12	24
Sefton Park ... (late Toxteth Rural)	...	...	...	...	1	2	3	...	4	3	8	5	13
Garston .....					...	2	...	1	3	2	3	5	8
Hospitals (Residences outside the City)					8	4	1	1	1	2	10	7	17
City	...	...	...	...	117	75	73	52	60	56	250	183	433

AGES AT DEATH.

Under 1 year.	1—	2—	5—	10—	15—	20—	30—	40—	50—	60 & up-wards.	All Ages.
113	80	74	57	26	17	22	24	9	6	5	433

Deaths in Public Institutions are transferred to the Districts from whence the patients came.

NOTIFICATION OF PHTHISIS.

The system of voluntary notification of those cases of consumption in which the services of the Health Department could be of use came into operation on 14th February, 1901, and has been continued with good results.

A special form upon which the notification can be made has been circulated amongst medical men, and in those cases in which the requirements of the Health Committee have been fulfilled, the usual notification fee has been paid.

A table of statistics relating to the work is set forth below.

PHTHISIS.

During the year 1902, the cases reported	
numbered	2,274
Of this number	75 were duplicates.
<hr style="width: 10%; margin: 5px auto;"/>	
Leaving a total of.....	2,199 Cases.
Deaths from the Disease totalled	1,347
Rooms, Bedding, &c., disinfected in	662 instances.
Bedding, &c., removed for special disin-	
fection in the apparatus in	24 ,,

The age period at which the greatest number of cases were reported is from 25 years upwards, when 1,237 males and 522 females were reported. 192 males and 175 females were reported between 15 and 25 years.

Total number of Males reported	1,469
Total number of Females reported	730

There were 53 cases of Tuberculosis other than of the lungs reported.

Dirty Houses were reported in	36 cases.
Patients were reported to be of intemperate habits in..	20 cases.

The occupations showing the largest number of cases were as follows:—

Labourers	159 Cases.
Carters	68 „
Charwomen	65 „
Seamen	61 „
Firemen.....	44 „
Domestic Servants	44 „
Hawkers	42 „
Joiners	37 „
Painters.....	31 „

The following table of information for consumptive people was circulated through appropriate channels:—

1.—Consumption is a preventible disease which is caused by minute living germs, called “tubercle bacilli,” which usually enter the body with the air breathed.

2.—The matter which consumptive people cough or spit-up contains the germs of the disease in great numbers. If this matter is spat upon the floors, or the walls of any public or private place, or elsewhere, as soon as it becomes dry the germs of the disease which it contains are blown about and float in the air, like any other minute particles of dust, and are inhaled by anybody breathing that air: or they may fall upon milk or other food, and gain access to the body with that food. These are the commonest ways in which the seeds of the disease enter the body of a healthy person.

3.—It may, therefore, be dangerous to sleep with or to live in close relationship with a consumptive, unless the patient is careful that what he coughs up is destroyed. A cup containing a little water should be used to spit in, so that the matter may not dry, and it should be emptied in the closet (not into the ashpit, or upon the footwalk or the roadway), and carefully washed afterwards with boiling water. If the consumptive prefers to use linen or calico cloths or handkerchiefs to spit in, they should be thrown upon the fire and burnt forthwith. He should take care that his hands, face, and clothing do not become soiled with the matter coughed up, nor should he swallow it.

4.—It is better for a consumptive to sleep alone, and the bed-clothing and personal clothing should be boiled and washed separately from the clothing of other people.

5.—Tubercle bacilli are not only the cause of ordinary consumption of the lungs, but they may also give rise to consumption of the bowels and other parts of the body, and therefore milk and other uncooked food should be carefully protected from the tubercle bacilli. If such food be kept in a place to which a consumptive patient of careless habits has access and who may spit upon the floor, the dry particles of the matter spat up may blow about with dust and find access to milk or other food, and in this way contaminate it.

6.—Cows suffer from consumption, and the milk from consumptive cows is liable to contain the tubercle bacilli. Milk had better be boiled for a few seconds unless the consumer is sure that it comes from a healthy cow, and that it has not been exposed to danger of contamination afterwards. These precautions should be specially observed in the case of children.

7.—Consumption is a disease from which large numbers of patients recover if the rooms they occupy are always kept thoroughly well-ventilated, and clean and free from dust.

8.—Sunshine and fresh air destroy tubercle bacilli, and are the principal curative agents; the more sunshine and fresh air the consumptive patient gets, the more likely is he to recover.

9.—Sanitary improvements which have been carried out in the city with a view to admit more pure air and sunshine to dwellings, and to lessen overcrowding, have reduced the mortality from consumption to about one-half of what it was 30 years ago, but, to reduce it still further, the people must help themselves by keeping their rooms clean and well-ventilated, and by maintaining strictly temperate habits.

10.—Rooms that have been occupied by consumptives should be thoroughly disinfected and cleansed before they are again occupied, and the carpets and bedding should be disinfected; in fact, so far as these precautions are concerned, consumption may be regarded in precisely the same light as any other infectious disease.

11.—The Officers of the Health Department are always ready to do the necessary disinfection, both of rooms and of clothing, free of charge.

CANCER.

The following table indicates the number of deaths from Cancer and kindred Diseases during the last five years, and the part of the body affected by the disease:—

DISEASE.	1898.			1899.			1900.			1901.			1902.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
Cancer of Stomach and Bowels...	92	89	181	103	86	189	70	101	171	117	106	223	103	93	196
" Liver	23	42	65	29	46	75	25	47	72	21	52	73	32	50	82
" Urinary and Genera- tive Organs	12	73	85	21	89	110	11	103	114	8	116	124	16	116	132
" Breast .....	...	47	47	1	49	50	...	48	48	...	43	43	...	54	54
" Head and Face	11	7	18	19	8	27	16	8	24	24	4	28	29	4	33
" Tongue, Neck, and Throat.....	47	10	57	31	9	40	44	9	53	51	6	57	51	13	64
" Other parts of the Body	8	5	13	11	5	16	17	9	26	16	8	24	16	10	26
" Parts not specified ...	17	12	29	7	16	23	4	14	18	9	12	21	11	15	26
Total	210	285	495	222	308	530	187	339	526	246	347	593	258	355	613

ALCOHOLISM.

It has already been pointed out in previous reports that there are grounds for the belief that intemperance is becoming less frequent, and for several years past this view has received confirmation by police statistics. Further and very gratifying evidence has been furnished during the past two years of a marked diminution in the number of deaths certified by coroners' juries to be the result of excessive drinking. The number so recorded was 169 in 1902, 155 in 1901, against 236 in 1900. The falling off in deaths from excessive drinking is a very satisfactory feature, and this fact, taken in conjunction with other official observations and reports, fully justify the belief that during the past two years the abuse of alcohol amongst the lower working classes has been lessened.

With regard to the fatal cases, inquests were held during the year on the bodies of 169 persons (58 of whom had died in Workhouses and Hospitals), viz., 37 men and 33 women, whose deaths were caused by excessive drinking; 66 men and 26 women whose deaths were accelerated by excessive drinking; 7 men who were fatally injured by accident whilst under the influence of drink. But besides these, there are many cases of fatal injury in which the verdict of "accidental death" omits any reference to the fact that the injured person was intoxicated at the time.

Injuries to infants and young children whilst in the custody of drunken persons are inevitable.

In seven inquests in which death was found to be the result of violence, both the person who inflicted the injuries and the injured person were under the influence of drink at the time; in two cases the injured person was drunk.

One male stabbed himself in the left breast, with fatal results.

In addition to the foregoing, "Alcoholism" is given as the cause of death of 1 man and 4 women.

The general effect of intemperance is indicated by the facts, which speak for themselves, that it is in the districts where there is most

intemperance that the general death-rate is highest and the proportion of deaths in workhouses is greatest.

Three districts are contrasted in these particulars:—

	Population.	General Death-rate per 1,000.	Proportion of Deaths in Workhouses and Hospitals.	Proportion of Deaths due to Excessive Drinking.
Exchange	41,332	34·6	43·0 per cent.	2·0 per cent.
West Derby (East)	44,872	16·0	14·9 „	0·4 „
Wavertree	27,304	14·6	12·0 „	0·5 „

FEVER AND DIARRHOEA MORTALITY.

The following table shows the death-rate per 1,000 of the population, and the number of deaths from Fever and Diarrhoea during the last nineteen years.

Year.	*Death Rate per 1,000 of Population from all causes.	Deaths from Diarrhoea.	Deaths from Fever.		
			Typhus.	Typhoid.	Continued.
1884	26·6	841	77	112	16
1885	25·6	422	71	95	16
1886	26·1	781	47	140	11
1887	26·4	619	52	130	12
1888	23·1	431	32	125	4
1889	24·9	575	45	167	...
1890	27·5	468	23	99	1
1891	26·8	330	37	92	2
1892	24·4	415	18	111	2
1893	26·7	866	44	221	5
1894	23·1	503	50	248	7
†1895	24·8	1,108	24	197	4
1896	21·4	851	36	166	2
1897	22·8	1,182	23	145	5
1898	22·2	956	19	148	5
1899	24·1	1,158	13	182	4
1900	23·1	900	11	120	4
1901	21·6	1,269	14	154	3
‡1902	21·6	611	25	190	2

* Calculated on corrected population as per Census Returns of 1891 and 1901.
† City Boundaries extended.
‡ City Boundaries extended.

Mr. Plummer, M.A. F.R.A.S., Astronomer to the Mersey Docks and Harbour Board, has kindly supplied the following tables relating to Meteorological observations made by him at the Liverpool Observatory, Bidston :—

LIVERPOOL OBSERVATORY, BIDSTON, BIRKENHEAD.

Latitude $53^{\circ} 24' 5''$ N. Longitude $3^{\circ} 4' 20''$ W.

Height above the Mean Level of the Sea 202 feet.

Year and Month, 1902..	Barometer. Mean.	Temperature. Mean.	Rainfall. Amount.	No. of days on which 0·01 in. or more rain fell.	Mean Monthly Humidity. Complete Satura- tion equal 100.
	Inches.	Degrees.	Inches.		
January	30·103	41·3	2·031	17	86
February	29·863	35·0	2·202	12	81
March	29·782	44·3	1·506	20	81
April	29·932	45·8	1·943	14	70
May	29·981	48·2	3·238	25	81
June	29·897	57·4	1·963	17	75
July.....	30·009	57·6	2·750	13	78
August	29·904	57·5	2·311	17	82
September	30·042	55·7	0·865	14	76
October	29·966	50·2	3·035	20	82
November	29·826	44·8	1·567	16	85
December	30·001	41·1	2·155	15	83

DIFFERENCE FROM THE AVERAGE QUANTITIES OBSERVED DURING THE
LAST 30 YEARS.

1902.	BAROMETER.		TEMPERATURE.		RAINFALL.	
	Above Average.	Below Average.	Above Average.	Below Average.	Above Average.	Below Average.
	Inches.	Inches.	Degrees.	Degrees.	Inches.	Inches.
January	0·170	...	2·1	...	...	0·142
February .....	...	0·078	...	5·2	0·517	...
March .....	...	0·117	2·4	...	...	0·166
April	0·036	...	...	1·3	0·312	...
May	0·013	...	...	2·8	1·325	...
June .....	...	0·089	...	0·5	...	0·104
July	0·071	...	...	3·1	...	0·016
August .....	...	0·013	...	2·7	...	0·638
September	0·104	...	...	0·7	...	2·082
October.....	0·092	...	0·9	...	...	0·517
November	0·073	...	1·0	...	...	1·098
December.....	0·137	...	1·0	...	...	0·499

OBSERVATIONS OF VELOCITY OF WIND.

1902.	Average Hourly Velocity for Month.	Maximum Hourly Velocity.	Date of Maximum Velocity.	Minimum Hourly Velocity.	Date of Minimum Velocity.
	Miles per Hour.	Miles.		Miles.	
January	20·0	52	Jan. 6	1	Jan. 11, 14.
February....	13·6	35	Feb. 2, 26	1	Feb. 4, 5, 6, 11, 12, 13, 14, 15, 20.
March.....	17·8	49	March 8	0	March 6, 16, 30.
April	15·6	48	April 4	1	April 12, 14, 15, 16, 17, 29.
May	16·5	41	May 16	1	May 20, 21.
June	12·6	43	June 1	1	June 4, 6, 10, 11, 15, 17, 21, 24.
July	14·8	46	July 10	1	July 5, 14, 15, 25.
August	13·3	37	August 10	0	August 16, 21, 29.
September..	14·5	46	Sept. 16	0	Sept. 25, 27.
October.....	16·7	50	Oct. 16	1	October 12, 13, 28.
November...	17·0	37	Nov. 11	1	November 13.
December...	22·0	58	Dec. 28	1	December 22.

SANITARY ADMINISTRATION.

SANITARY ADMINISTRATION.

For the purpose of carrying out the requirements of the various Sanitary Acts of Parliament and the Orders, Bye-laws, and Regulations made thereunder, the following staff of the Medical Officer of Health's Department has been employed during the year:—

*Chief Sanitary Inspector	...	...	...	...	1
*Deputy Chief Sanitary Inspector	...	...	...	...	1
*Prosecuting Sanitary Inspectors	...	...	...	...	7
*Inspectors for General Sanitary Purposes	...	...	...	...	32
*Female Inspectors for General Sanitary Purposes	...	...	...	...	8
§Inspectors of Meat and Animals	...	...	...	...	4
„ under the Diseases of Animals Act	...	...	...	...	2
** „ of Fish and Fruit	...	...	...	...	4
*** „ under the Sale of Food and Drugs Act...	...	...	...	...	3
* „ „ Workshop and Shop Hours Act.	...	...	...	...	3
† „ , Smoke	...	...	...	...	3
‡ „ , Ambulance	...	...	...	...	4
„ , Disinfecting and Wall Stripping Staff	...	...	...	...	47
Superintendents of Disinfecting Apparatus	...	...	...	...	2
*Chief Inspector of Common Lodging and Sub-let Houses	...	...	...	...	1
***Inspectors of Common Lodging and Sub-let Houses	...	...	...	...	13
*Inspector of Canal Boats	...	...	...	...	1
* „ Bakehouses	...	...	...	...	1
*Inspectors of Cowsheds and Milkshops	...	...	...	...	2
Notice Servers	...	...	...	...	3
Permanent Clerical Staff	...	...	...	...	22
Temporary Assistants	...	...	...	...	12

In every case Officers are selected for these positions, whose previous training and occupation have been such as to fit them for the special

duties they are called upon to discharge. Those marked * are required to hold the Certificate of the Sanitary Institute of Great Britain or a Certificate equivalent thereto; those marked † have Marine Engineers' First Class Certificates, and the ‡ Superintendent Ambulance Inspector holds Sanitary Certificate, and also the Certificate of St. John's Ambulance Association. ** Fishmongers by trade. § Butchers by trade; candidates are submitted to practical examination upon the lines which have been indicated in the Report of the Royal Commission upon Tuberculosis. ***Several hold the Certificate of the Sanitary Institute, or an equivalent thereto.

The number of occasions upon which the advice and assistance of the Health Department have been sought has increased during the year. These applications fluctuate slightly year by year; in 1896 they were 7,993, in 1897 they were 8,852, in 1898 they were 9,362, in 1899 they were 9,215, in 1900 they were 11,321, in 1901 9,657, in 1902 9,699. As in former years, complaint in many cases was made to the Health Department only after repeated requests addressed to the persons causing or allowing the nuisance, or to agents or owners of property, had been ignored. Generally speaking, these complaints arise in connection with jerry-built property. A great deal of the time of the Inspectors was taken up by these special examinations.

Requests to examine important public buildings and offices, as well as highly-rented dwelling-houses, have been very numerous as usual, and the application of the smoke test has in many cases brought to light defects in the drainage system. Requests for the application of the smoke test are frequent.

A very large number of sanitary notices are served upon owners in respect to what is well known as "insanitary property."

Owners would do well to demolish property such as this, and erect suitable habitations in their place. By thus co-operating with the Housing Committee, they would rid themselves of the annoyance of receiving notices, and remove centres of disease and degradation from the city.

The following table shews the number of nuisances found by routine inspection or on complaints, and the character of the proceedings taken to abate the nuisances, and the results:—

					<u>1901.</u>	<u>1902.</u>
Number of Complaints made by Inhabitants	...	...			9,657	9,699
„ Nuisances discovered on above complaints	...				19,195	21,361
„ „ „ house to house inspection	...				87,537	85,863
					<u>1901.</u>	<u>1902.</u>
„ Notices issued ...	{ Owners	47,853	46,433		50,436	49,025
	{ Occupiers	2,583	2,592			
„ Notes to complainants	...	...	...		3,872	3,582
„ „ sent to comply with notices	...	...	...		7,982	8,547
„ Nuisances re-inspected	...	...	...		144,213	149,652
„ „ abated on re-inspection	...	...	...		82,512	85,774
„ Drains repaired	...	...	...		34,372	35,488
„ Ashpits „	...	...	...		2,840	2,259
„ Closets „	...	...	...		32,274	33,258
„ Water Closet Conversions	...	...	...		9	0
„ Ashpits substituted by improved movable Sanitary Bins	...	...	...		2,069	5,222
„ Spouts fixed and repaired	...	...	...		1,458	958
„ Notices to remove animals	...	...	...		159	168
„ Premises from which offensive matter has been removed	...	...	...		25	18
Nuisances caused by Stagnant Water	...	...	...		433	338
„ „ Dilapidated Houses	...	...	...		26	75
Number of Premises found without water and supplied					8,846	7,980
„ Chimneys repaired to abate smoke nuisances					1	—
„ Railway Carriages inspected	...	...	...		991	3,210
„ Premises under observation	...	...	...		1,146	1,017
„ Informations laid	...	...	...		868	1,092
„ Fined	...	...	...		203	203
„ of Magistrates' Orders	...	...	...		379	468
„ Acquitted or Withdrawn	...	...	...		286	421
Amount of Fines and Costs	..	£210	6	0	£222	1 0

ASHPITS TO BE SUBSTITUTED WITH IMPROVED SANITARY
ASHBINS.

					<u>1901.</u>	<u>1902.</u>
No. of Ashpits reported	...	...	...	...	2,286	3,618
„ Ashbins required	...	...	...	...	2,810	6,103
„ Notices	...	...	...	...	1,327	2,951

REFERENCES TO OTHER DEPARTMENTS.

A considerable number of conditions ascertained by the Sanitary Staff to be prejudicial to health were referred to other departments to be dealt with :—

			<u>1901.</u>	<u>1902.</u>
Referred to City Engineer ...	...	...	8,856	9,216
„ Building Surveyor ...	...	...	1,638	1,799
„ Water Engineer ...	...	...	5,726	6,253
„ School Board ...	...	...	27,997	39,182

The references to the Water Engineer comprise, mainly, defective fittings, resulting in waste of water; also cases in which the supply was insufficient, owing to various causes.

The references to the School Board chiefly relate to children from infected houses who are attending school, or who are suffering from ring-worm, ophthalmia, &c. (See page 127). The increase is largely owing to the prevalence of measles and scarlatina.

REFERENCES FROM OTHER DEPARTMENTS.

			<u>1901.</u>	<u>1902.</u>
Received from the City Engineer ...	...	...	11,431	10,665
„ Water Engineer ...	...	...	4,024	4,629
„ Lodging-house Inspectors			6,174	7,442
„ School Board ...	...	...	12,934	20,515

The references from other Departments mainly comprise insanitary conditions discovered by officers belonging to those departments, but with which it is not within their province to deal. The City Engineer's Department continues to report defects in private drains brought to light during the process of systematic flushing.

HOUSE TO HOUSE VISITATION.

The following table indicates the results of the systematic house-to-house visitation by the District Male Staff:—

			<u>1901.</u>	<u>1902.</u>
Number of Inspections of Street Houses	...	...	22,284	26,631
„ Street Houses found Clean	...	...	19,319	23,731
„ „ „ Dirty	...	...	2,965	2,900
„ Apartments in Street Houses Examined			109,377	133,115
„ Inspections of Court Houses	...	...	2,138	2,283
„ Court Houses found Clean	...	...	1,680	1,739
„ „ „ Dirty	...	...	458	546
„ Apartments in Court Houses Examined			6,461	7,015
Total Number of Houses Examined and Re-inspected			30,034	28,863

DIRTY HOUSES.

			<u>1901.</u>	<u>1902.</u>
Number of Dirty Street Houses Inspected	...	...	2,965	2,900
„ „ Court „	...	...	458	546
„ „ Cellars Inspected	...	...	791	971
„ „ Houses and Cellars Re-inspected...			2,647	2,436
„ Notices to Owners to Cleanse Dirty Houses	...	...	3,776	3,875
„ Notices to Occupiers to Whitewash Dirty Houses	...	...	398	275
„ Notices to Owners to Whitewash Exteriors of Courts	...	...	1,879	1,239
„ Informations	...	...	47	48
„ Fined	...	...	27	28
„ Acquitted or Withdrawn	...	...	20	20
<hr/>				
Amount of Fines and Costs	...	...£24 3s. 0d.	| £20 14s. 0d.	

COURT AND ALLEY EXAMINATIONS.

								<u>1901.</u>	<u>1902.</u>
Number of Visits to Courts and Alleys ...	...	...	...	...	...	...	...	58,715	55,605
„ Closets found Dirty, but Cleansed by Officer's Instruction								63,130	51,519
„ Informations ...	...	...	...	...	...	...	...	4	5
„ Fined ...	...	...	...	...	...	...	...	4	5
Amount of Fines and Costs	...	...	...	...	...	...	...	£0 8 0	£0 10 0

Special and systematic visits to courts and alleys are made with the object of ensuring the cleanliness of the domestic offices and the surface of the courts. The aim is to keep the courts and alleys uniformly clean throughout the week, and with this view the district inspectors are instructed that every tenant in each court is in turn to be held responsible for the cleanliness of the court for a period of one week; the inspector records in his visiting book whose turn it is, and duly informs that tenant. Failing compliance with his requirements, an information is laid under the following bye-law, made under the Liverpool Sanitary Act, 1846:—

“First. From and after the day on which these bye-laws shall come into operation, whenever tenants or occupiers of several houses in courts, alleys, streets, and other places within the Borough, have the right to use in common any middenstead or privy, the several persons having such right shall be, and they are hereby required to keep the internal walls, floors, seats, and fittings of such middenstead or privy thoroughly clean, so that the same is not a nuisance or annoyance to any inhabitant of the said Borough.

Second. That if any privy or middenstead so used in common, or the walls, floors, seats, or fittings thereof, or any of them, shall be in such a state or condition as to be a nuisance or annoyance to any inhabitant of the Borough, for want of proper cleansing thereof, as aforesaid, then the persons having the use thereof in common as aforesaid, shall severally be liable to a penalty not exceeding 40s., and a further penalty not exceeding 5s. for every day during which the same shall remain in such state or condition.”

But under the Public Health Acts Amendment Act, 1890, somewhat similar proceedings may be taken.

Section 21 of this Act runs as follows:—

“ With respect to any sanitary conveniences used in common by the occupiers of two or more separate dwelling-houses, or by other persons, the following provisions shall have effect:—

(1) If any person injures or improperly fouls any such sanitary convenience, or anything used in connection therewith, he shall for every such offence be liable to a penalty not exceeding ten shillings:

(2) If any sanitary convenience or the approaches thereto, or the walls, floors, seats, or fittings thereof is, or are, in the opinion of the urban authority or of the inspector of nuisances or medical officer of health of such authority in such a state or condition as to be a nuisance or annoyance to any inhabitant of the district for want of the proper cleansing thereof, such of the persons having the use thereof in common as aforesaid as may be in default, or in the absence of proof satisfactory to the court as to which of the persons having the use thereof in common is in default, each of those persons shall be liable to a penalty not exceeding ten shillings, and to a daily penalty not exceeding five shillings.”

The stipendiary magistrate has rendered great help to the department by imposing a small fine in those cases in which a prosecution became necessary. Improvement results up to a point, but the constant attention of the officer is very necessary, since the filthy habits of the people soon lead to a recurrence of the dirty conditions if the visits are lessened.

The courts and alleys continue to decrease in number, owing to the demolition of low-class property for the extension of business premises, or to the removal of insanitary property by the Housing Committee. The number of courts and alleys scheduled for inspection in 1890 was 2,165, in 1895 it had fallen to 1,660, in 1897 it had further fallen to 1,593, in 1898 the number was 1,466, in 1899 it was 1,432, in 1900 it was 1,195, in 1901 it was 1,159, and in 1902 it was 1,074, showing a diminution in twelve years of 1,091 courts.

During the year all courts and alleys having covered entrances were specially washed and hosed down by the scavengers. Under the Liverpool Sanitary Act the exteriors of all courts and alleys require to be limewashed as often as may be necessary. In 1901 it was deemed advisable to cause the limewashing to be done in the autumn as well as in the spring. This practice has continued since.

COMMON LODGING-HOUSES.

The Common Lodging-Houses Act provides that any person opening any premises as a Common Lodging-House, or receiving lodgers therein, without making application to the Medical Officer of Health to have such premises registered, is liable to a penalty of 40s. for every such offence.

When premises have been approved and registered in accordance with the requirements of the Common Lodging-Houses Act, the following rules and instructions, together with suitable and permanent cards indicating the various requirements, are handed to the keeper, to place in a prominent position in each room.

In addition to the requirements mentioned in the following instructions, the cleanliness and suitability of the beds and bedding engage the attention of the inspector :—

RULES AND INSTRUCTIONS.

1.—No greater number than Lodgers are to be received or accommodated in this house at any one time.

2.—The windows of every sleeping-room in this house are to be opened, and kept open to their full width, from nine to ten o'clock every morning, and from two to three o'clock every afternoon (weather permitting), unless in case of sickness in any room requiring the windows to be closed.

3.—The floors of every room in this house shall be well swept every morning before the hour of ten, and shall be well washed during the morning of every Friday.

4.—This house shall be thoroughly cleansed, and the walls and ceiling of every room in this house shall be well and sufficiently lime-washed, and the blankets, rugs, and bed-clothes, and covers used in this house, shall be thoroughly cleansed and scoured in the first week of each of the months of April, August, and December.

5.—Upon any person in this house, whether a Lodger or one of the family, being affected with fever or any contagious or infectious disorder, the Keeper shall forthwith give notice thereof to the Medical Officer of Health, at his Office, Municipal Offices, Dale Street, and the Medical Officer will visit the house, and take such proceedings as he shall think proper in compliance with the Act.

6.—If any person in this house shall be affected with fever or any infectious or contagious disorder, the blankets and bed-clothes used by such person shall be thoroughly cleansed and scoured, and the bedding fumigated, immediately after the removal of such person, and where the bedding used consists of shavings or straw, the same shall be burned immediately after such removal.

7.—The Keeper of this house shall provide sufficient accommodation for washing, together with a sufficient supply of water for the use of the Lodgers herein.

8.—The Keeper of this house shall reduce the number of Lodgers, or shall cease to receive and accommodate Lodgers altogether, immediately upon receiving notice to that effect from the Medical Officer of Health.

9.—This ticket shall be placed and kept in such situation in this house as the Medical Officer of Health shall from time to time direct, and shall be produced and delivered to such Officer on demand.

N.B.—The keeper of any lodging-house defacing or removing this ticket or disobeying the above Rules and Instructions, will be liable to the several penalties in that behalf provided by the Bye-laws for regulating Lodging-houses, a copy whereof may be obtained on application at the Office of the Town Clerk, at the Municipal Offices, Dale Street.

By order of the Health Committee.

At the end of 1901 there were on the register a total (including emigration houses) of 620 lodging houses, and at the end of 1902 the total number was 558, which furnished accommodation for 13,497 lodgers, besides 1,557 members of the keepers' families.

During the year 172 houses were given up and removed from the register, and 110 new houses added, leaving the number on the register 558. The diminution in the number of lodging-houses is due to several houses being closed, which were used for the accommodation of navvies, who left the town as the work on which they were engaged was completed.

Three applications were refused by the Health Committee, two on the ground that the houses were not suitable for the purpose of keeping lodgers, and the other one because the character of the applicant was not satisfactory.

In some of the better-class houses for men, separate cubicles are provided for each lodger, the price paid for them varying from 6d. to 1s. 6d. per night. These cubicles are much more appreciated than the ordinary accommodation provided.

The number of what are known as "model" lodging-houses, for men only, upon the register is 138, and these are registered to accommodate 6,155 lodgers, as well as 272 members of the keepers' families.

The term "model" appears now to be used as a trade designation to indicate premises used for the accommodation of one sex only.

There are also 26 registered model lodging-houses for the accommodation of women only. These have room for 657 lodgers, in addition to 31 members of the keepers' families.

The visits to lodging-houses are both by day and by night. The night visits are almost restricted to the lower districts and commoner class of house. The lodging and emigration houses of the better class, especially those provided only with single beds for each person, and with no more beds than are equivalent to the number of lodgers allowed, are only occasionally visited at night, unless special circumstances necessitate a closer supervision.

Houses which are not licensed either as lodging or sub-let houses are frequently visited by day when such a course is deemed expedient, in order to ascertain whether any grounds exist for putting these houses on the register.

There were 414 visits paid during the year to such houses, and in one case, where the suspicion was confirmed, a night visit was paid, and the tenant summoned and fined by the magistrate for taking lodgers without having the premises registered.

Persons harbouring lodgers in unlicensed premises receive a notice to apply to have the rooms measured and licensed. There were 38 such notices issued during the year, but in only 1 case was it necessary to institute a prosecution.

The number of day visits paid during the year was 26,016, and the night visits 1,461. During the preceding year the day visits were 24,380, and the night visits 1,434.

Seventy-five informations were laid against keepers of common lodging-houses during the year for the following offences:—

	1901.	1902.
Not sweeping floors	21	18
Not washing floors	17	31
Overcrowding	16	11
Receiving lodgers in unlicensed rooms ...	2	4
Not applying to register	3	1
Mixing sexes	4	4
Not limewashing	4	3
Neglecting to notify infectious disease ...	—	3
Total	67	75

Convictions followed in 73 cases, the total amount of fines amounting to £46 6s. 6d., and ranging from 1s. and costs to 40s. and costs. During the preceding year there were 66 convictions, and the fines amounted to £15 0s. 0d.

One case was withdrawn, and one acquitted.

The number of lodging-houses found dirty was 122; in each case notices were served to limewash and cleanse.

The Bye-law requires that every case of infectious sickness in a lodging-house should be at once reported to the Medical Officer of Health. Two hundred and two cases of infectious sickness occurred in lodging-houses; 196 of the patients were at once sent to hospital; the remaining six were members of the keepers' families, and were not removed, the license being suspended until the recovery of the patients. Seventy-four of the infectious cases were Smallpox, and the patients were all removed to hospital. In all cases the bedding was removed to the disinfecting apparatus, and the rooms purified and cleansed. There were 39 deaths from non-infectious diseases in lodging-houses, 25 of the deceased persons belonging to the keepers' families, and 14 were lodgers.

SEAMEN'S LICENSED LODGING-HOUSES.

The Corporation have made bye-laws, with the sanction of the President of the Board of Trade, for the licensing of Seamen's Lodging-houses, under the Merchant Shipping (Fishing Boats) Act, 1883, Section 48.

Applications from the keepers of Registered Common Lodging-Houses for licenses authorising the designation of such Registered Common Lodging-Houses as Seamen's Licensed Lodging-Houses, are infrequent, only twelve such licensed lodging-houses now being on the register; these provide accommodation for 213 seamen.

The number of licenses granted since the adoption of the Seamen's Licensed Lodging-House Bye-Laws is 28.

It has not been found necessary to institute proceedings under the bye-laws in question.

Some years ago the holders of licenses to keep Seamen's Lodging-Houses were authorised by the Board of Trade to board vessels and seek for lodgers, and while this privilege was granted there was an advantage in holding such a license, but that privilege being now withdrawn, it does not appear that there is any advantage to the keeper of a common lodging-house to have his premises registered as a Seamen's Lodging-House, and hence probably the small number upon the register.

SUB-LET HOUSES.

These are houses, one or more rooms of which are let off in each case by the chief tenant or owner of the house to members of one or more other families. The Bye-laws provide for registration and inspection, in order to prevent overcrowding, and to ensure attention to cleanliness and sanitary requirements.

The number added to the register during 1902 was 1,489, making the total on the register on the 31st December, 19,976. In the newly added district of Garston a large number of houses were found to be sub-let, and were put on the register. The reasons for putting the houses on the register have arisen from various causes, some no doubt are owing to persons who have come from insanitary property which has been

demolished. Many of the houses dealt with by the Housing Committee, as unfit for human habitation were on the sub-let register. The number of visits paid to sub-let houses during the night was 17,274, and during the day 60,322, with the result of finding 1,400 rooms overcrowded. In addition to overcrowding, 295 cases of indecent occupation came under the notice of the inspectors, as against 493 last year. The character of the indecent occupation may be judged from the following facts:—In 151 instances one man and two women were found in the same bedroom; in 94 instances two men and one woman; in 23 instances two men and two women; in 7 instances one man and three women; in 10 instances three men and one woman; in 3 instances three men and two women; in 4 instances two men and three women; in 1 instance two men and four women; in 1 instance four men and one woman; and in 1 instance three men and three women. These cases appear to be the outcome of ignorance and indifference, and not of immoral intent. Under the new Bye-Laws a number of persons have been fined for mixing sexes, and a number, who cannot be reached under the bye-law, cautioned by the Inspectors.

Informations were laid against 1,716 chief tenants, “room-keepers,” for breach of the bye-laws, viz.:—

Overcrowding	...	...	...	...	...	1,150
Floors not washed	...	...	...	...	...	90
Floors not swept	...	...	...	...	...	193
Refusing admission	...	...	..	...	...	1
Not cleansing stairs, &c.	...	...	...	...	...	178
Mixing sexes	...	...	...	...	...	104
						<hr/>
Total	...	...	...	...	...	1,716

One case withdrawn; one case acquitted.

Fifteen of these cases were in respect of premises in the newly incorporated district of Garston, thirteen for overcrowding and two for mixing sexes.

As the result of proceedings before the Stipendiary Magistrate, fines were inflicted as follows:—1,052 fined 1s. and 1s. costs; 313 fined 1s. 6d. and 1s. 6d. costs; 128 fined 2s. and 2s. costs; 74 fined 2s. 6d. and 2s. 6d. costs; 45 fined 5s. and 4s. 6d. costs; 75 fined 10s. and 4s. 6d. costs; 26 fined 20s. and 4s. 6d. costs; 1 fined 40s. and 4s. 6d. costs; making a total of fines levied during the year of £306 1s. 6d. Offences against the bye-laws have been fewer than in the preceding year. There were 589 less inspections by night than in the preceding year; the day visits were 942 more.

The gradual diminution in overcrowding led the Health Committee in 1901 to amend the bye-laws relating to sub-let houses, and the City Council, with the sanction of the Local Government Board and on the recommendation of the Health Committee adopted amended bye-laws, which amongst other important provisions contained clauses providing that every lodger above 10 years of age shall have not less than 400 cubic feet of air space, and every person below 10 years of age shall have not less than 200 cubic feet, but if the room is used as a day-room as well as a bedroom, then every inmate must have at least 400 cubic feet. Under the previous bye-law a space of 350 feet only was required, and two persons under twelve were regarded as one adult.

The new bye-laws came into operation on the 30th January, 1901. One result of these bye-laws—which required so relatively large an addition to the cubic space allowed for each lodger—was to put an entirely new definition upon the offence of overcrowding, and although the great majority of people quickly appreciated the effect of the new bye-laws, yet there was necessarily a considerable increase in the number of persons proceeded against for overcrowding amongst those who neglected to comply with the altered provisions.

BYE-LAWS AS TO HOUSES LET IN LODGINGS, OR OCCUPIED BY
MEMBERS OF MORE THAN ONE FAMILY.

The Council, on the 5th day of December, 1900, in pursuance of the powers vested in them, made the following Bye-laws:—

BYE-LAWS made by the Mayor, Aldermen and Citizens of the City of Liverpool, acting by the Council with respect to Houses let in lodgings or occupied by members of more than one family in the City of Liverpool.

For fixing the number of persons who may occupy a house or part of a house which is let in lodgings, or occupied by members of more than one family :

For the registration of houses so let or occupied :

For the inspection of such houses :

For enforcing the provision of privy accommodation for such houses, and for promoting the cleanliness and ventilation in such houses :

For the cleansing and lime-washing at stated times of the premises, and for the paving of the courts and courtyards thereof :

For the giving of notices and the taking of precautions in case of any infectious disease.

1. In these Bye-laws, unless the context otherwise requires, the following words and expressions have the meanings hereinafter respectively assigned to them, that is to say—" Council " means the Mayor, Aldermen and Citizens of the City of Liverpool acting by the Council—" Lodging House " means a house or part of a house which is let in lodgings or occupied by members of more than one family—" Landlord," in relation to a house or part of a house which is let in lodgings or occupied by members of more than one family, means the person (whatever may be the nature or extent of his interest in the premises) by whom or on whose behalf such house or part of a house is let in lodgings or for occupation by members of more than one family, or who, for the time being, receives, or is entitled to receive, the profits arising from such letting—" Lodger," in relation to a house or part of a house which is let in lodgings or occupied by members of more than one family, means a person to whom any room or rooms in such house, or part of a house, may have been let as a lodging or for his use and occupation—" Medical Officer of Health " means the Medical Officer for the time being of the Council, or any person duly authorised by the Council to act as his Deputy.
2. A lodging-house shall be exempt from the operation of the Bye-laws numbered 3, 4, and 7 to 17, all inclusive, until the landlord of such lodging-house shall have been required in pursuance of Bye-law 5 to furnish the particulars therein mentioned.

3. The landlord and a lodger as regards any room let to him in a lodging-house shall not, nor shall either of them, knowingly cause or suffer a greater number of persons than will admit of the provision of four hundred cubic feet of free air space for each person of an age exceeding ten years, and of two hundred cubic feet of free air space for each person of an age not exceeding ten years, to occupy, at any one time, as a sleeping apartment, a room which is used exclusively for that purpose, and which has been let in lodgings.
4. The landlord and a lodger as regards any room let to him in a lodging-house shall not, nor shall either of them, knowingly cause or suffer a greater number of persons than will admit of the provision of four hundred cubic feet of free air space for each person to occupy, at any one time, as a sleeping apartment, a room which is not used exclusively for that purpose, and which has been let in lodgings.
5. The landlord of a lodging-house forthwith after he shall have been required by a notice in writing, signed by the Medical Officer of Health, and duly served upon or delivered to such landlord, to supply the information necessary for the registration of such house by the Council shall himself or by his agent duly authorised in that behalf, sign and furnish to the Council a true statement of the following particulars with respect to such house: that is to say,
 - (a) The total number of rooms in the house:
 - (b) The total number of rooms let in lodgings or occupied by members of more than one family:
 - (c) The manner of use of each room:
 - (d) The number, age and sex of the occupants of each room used for sleeping:
 - (e) The Christian name and surname of the lessee of each room; and,
 - (f) The amount of rent or charge payable by each lessee.
6. The landlord of a lodging-house shall in the first week of the months of April and October in every year, and at such other times as may be necessary, cause every part of the premises to be

thoroughly cleansed. He shall at the same time, and at such other times as may be necessary, except in such cases as are hereinafter specified, cause every area, the interior surface of every ceiling and wall of every water closet belonging to the premises, and the interior surface of every ceiling and wall of every room, staircase and passage in the house to be thoroughly washed with hot lime-wash.

Provided that the foregoing requirement with respect to the lime-washing of the internal surface of the walls of the rooms, staircases, and passages shall not apply in any case where the internal surface of any such wall is painted, or where the material of, or with which such surface is constructed or covered is such as to render the lime-washing thereof unsuitable or inexpedient, and where such surface is thoroughly cleansed and the paint or other covering is renewed, if the renewal thereof be necessary for the purpose of keeping the premises in a cleanly and wholesome condition.

7. Every lodger in a lodging-house shall cause the floor of every room which has been let to him to be thoroughly swept once at least *every day* before the hour of eleven o'clock in the forenoon, and to be thoroughly washed once at least in *every week*, viz., on every Saturday, before the hour of eleven o'clock in the forenoon.
8. In every case where a lodger in a lodging-house is entitled to the exclusive use of any staircase, landing or passage in such house, such lodger shall cause every part of such staircase, landing or passage, to be thoroughly cleansed from time to time as often as may be requisite.
9. In every case where two or more lodgers in a lodging-house are entitled to the use in common of any staircase, landing or passage in such house the landlord shall cause every part of such staircase, landing or passage to be thoroughly cleansed from time to time as often as may be requisite.
10. Every lodger in a lodging-house shall, except in such cases as are hereinafter specified, cause every window of every room which has been let to him, and which is used as a sleeping apartment, to be opened to its full width, and to be kept fully open for *one*

hour at least before eleven o'clock in the forenoon, and for *one hour* at least between eleven o'clock in the forenoon and four o'clock in the afternoon of every day.

Provided that such lodger shall not be required, in pursuance of this Byc-law, to cause any such window to be opened or to be kept open at any time when the state of the weather is such as to render it necessary that the window should be closed, or when any bed in any such room may be occupied by any person in consequence of sickness or of some other sufficient cause.

11. The landlord of a lodging-house, immediately after he shall have been informed, or shall have ascertained, that any person in such lodging-house is ill of an infectious disease, shall give written notice thereof to the Medical Officer of Health.
12. In every case where a lodger in a lodging-house has been informed, or has ascertained, or has reasonable grounds for believing that an occupant of any room which has been let to such lodger is ill of an infectious disease, such lodger shall forthwith give written notice thereof to the landlord, and to the Medical Officer of Health, and verbal or written notice thereof to every other lodger in such lodging-house.
13. In every case where, in pursuance of the statutory provision in that behalf, an order of a justice has been obtained for the removal from a lodging-house to a hospital, or other place for the reception of the sick, of a person who is suffering from any dangerous infectious disorder, and is without proper lodging or accommodation, or lodged in a room occupied by more than one family, the landlord of such lodging-house, and the lodger to whom any room whereof such person may be an occupant has been let shall, on being informed of such order, forthwith take all such steps as may be requisite on the part of such landlord, and of such

lodger, respectively, to secure the safe and prompt removal of such person in compliance with such order, and shall, in and about such removal, adopt all such precautions as, in accordance with any instructions which such landlord and such lodger respectively may receive from the Medical Officer of Health, may be most suitable for the circumstances of the case.

14. No lodger shall suffer any person above the age of twelve years to occupy as a sleeping apartment any room let to such lodger if the room is occupied by more than one person above that age and of the opposite sex.
15. In every case where the landlord of a lodging-house does not occupy or reside in any part of the premises or retain a general possession or control of the premises, every lodger who is entitled to have or to exercise the control of the outer door of the premises shall at all times when required by the Medical Officer of Health, the Inspector of Nuisances, or the Surveyor of the Council, afford any such officer free access to the interior of the premises for the purpose of inspection.
16. Every lodger in a lodging-house shall, at all times when required by the Medical Officer of Health, the Inspector of Nuisances, or the Surveyor of the Council, afford any such officer free access for the purpose of inspection to the interior of any room or rooms which may have been let to such lodger.
17. In every case where the Medical Officer of Health, the Inspector of Nuisances, or the Surveyor of the Council has, for the purpose of inspection, obtained access to the interior of a lodging-house or to the interior of any room or rooms in such house, a person shall not wilfully obstruct any such officer in the inspection of any part of the premises, or, without reasonable excuse, neglect or refuse, when required by any such officer, to render him such assistance as may be reasonably necessary for the purpose of such inspection.

PENALTIES.

18. Every person who shall offend against any of the foregoing Bye-laws shall be liable for every such offence to a penalty of forty shillings, and in the case of a continuing offence to a further penalty of ten shillings for each day after written notice of the offence from the Council.

Provided nevertheless that the justices or court before whom any complaint may be made or any proceedings may be taken in respect of any such offence may (if they think fit) adjudge the payment, as a penalty, of any sum less than the full amount of the penalty imposed by this Bye-law.

REPEAL.

19. From and after the date of the confirmation of these Bye-laws, the Regulations and Bye-laws with respect to houses let in lodgings or occupied by members of more than one family, which were made by the Town Council of the City of Liverpool on the 10th day of March, 1869, and on the 7th day of October, 1885, respectively, and which were confirmed by one of Her Majesty's principal Secretaries of State and by the Local Government Board respectively, on the 23rd day of March, 1869, and on the 3rd day of December, 1885, shall so far as the same may be in force in the City of Liverpool be repealed.
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EXAMINATION OF CELLAR DWELLINGS.

	<u>1901.</u>	<u>1902.</u>
Number of Street Cellars inspected	5,706	6,698
„ „ „ found empty	92	104
„ „ „ used for Lumber, &c. ...	1,930	2,545
„ „ „ found illegally occupied...	190	180
„ „ „ „ legally „ ...	3,494	3,869
„ Notices issued to Owners... ..	218	216
„ „ „ Occupiers	164	152
„ Informations against Street Cellar Owners	5	9
„ Fined	4	6
„ of Informations against Street Cellar Occupiers	2	6
„ Fined	2	2
„ of Court Cellars inspected	500	338
„ „ „ found empty	23	12
„ „ „ used for Lumber, &c. ...	332	293
„ „ „ illegally occupied ...	5	—
„ „ „ legally „ ...	140	33
„ „ and Street Cellars found dirty...	791	971
„ Informations against Court Cellar Owners	3	—
„ Fined	3	—
„ of Informations against Court Cellar Occupiers	4	—
„ Fined	1	—
Amount of Fines and Costs ...	£9 18 0 | £8 11 6	

The total number of cellars let as separate dwellings at present upon the register is 3,178, besides which there are 6,448 cellars used in conjunction with the dwelling-house above, but not let as separate dwellings.

The number of cellars filled in by the Health Committee, free of charge to the owners, during the year is 23 and the total filled in during the last ten years is 730.

About 9,300 people are at present housed in cellars.

Cellars occupied as dwellings must comply with certain requirements under the Liverpool Improvement Act of 1871, and the Public Health Act of 1875. The requirements of the Act specially relating to Liverpool may be summarised as follows, and any person who lets or suffers to be

occupied any cellar, in contravention of these requirements, is liable to a penalty not exceeding ten pounds:—

“ For the purpose of this enactment, every room, the surface of the floor of which is more than four feet below the level of the nearest street, shall, if intended to be used as a separate dwelling, be deemed a cellar dwelling, and every cellar which any person shall at any time apparently inhabit or in which any person shall be found between the hours of eleven in the evening and five o'clock in the morning, shall be held and taken to be occupied as a separate dwelling.”

“ Every cellar dwelling shall have a height from the floor to the ceiling in every part of such dwelling of not less than seven feet; no cellar dwelling shall have any part of its floor more than four feet below the surface of the footway of the adjoining street; every cellar dwelling shall have, both at the front and rear thereof, and for the full extent thereof, respectively, an area not less than two feet six inches wide in every part thereof, from six inches below the floor of the cellar to the surface of the ground adjoining the front and rear thereof respectively; if the cellar dwelling consists of two cellars back-to-back, it shall suffice if there be one area in front and one behind such two cellars; every area shall be protected by railings or gratings to the satisfaction of the Corporation; the steps for access to the cellar dwelling may be in the area, but shall not be opposite to the window of the cellar; the steps or access to the house above the cellar door may be across or over but not in such area, and shall not be over or opposite the window of the cellar; save as aforesaid the areas in the front and rear, respectively, shall be open and free from obstruction; every cellar or room in any cellar dwelling shall have an open fire-place, with a proper flue therefrom; every cellar dwelling shall have a water-closet, or other like convenience, and (if required by the Corporation) an ash pit or dust bin, to be built or placed in such situation as the Corporation think fit, and to their satisfaction; every cellar dwelling shall have at least one window in an outer wall, and not less than three feet square or nine square feet clear of the sash frame, and if such cellar dwelling consists of two or more cellars, each of such cellars shall have one such window; every such window shall either be a casement window, opening on hinges or pivots, or a sash window with double sashes opening at the top and bottom.”

The Building Surveyor has kindly supplied the following table :—

NUMBER OF HOUSES ERECTED AND TAKEN DOWN DURING THE YEAR ENDING
DECEMBER, 1902.

DISTRICTS.							Number erected.	Number taken down
Scotland	...	...	...	...	...	...	134	151
Exchange	...	...	...	...	...	...	5	167
Abercromby	...	...	...	..	...	..	—	112
Everton...	...	...	...	...	...	...	74	—
Kirkdale	...	...	...	...	...	...	7	38
West Derby (West)	...	...	...	...	...	..	6	5
Toxteth...	...	...	...	...	...	...	1	45
Walton...	...	...	..	...	...	...	482	11
West Derby (East)	...	...	...	...	...	...	776	5
Wavertree	...	...	...	...	...	...	509	14
Sefton Park	...	...	...	...	...	...	67	—
Total							2,061	548

The City Engineer has kindly supplied the following :—

Number of cellars filled in during 1902	...	...	...	...	...	23
„ „ „ the last 10 years	...	...	...	...	...	730

SEWER VENTILATION TO END OF 1902.

Number of 9-inch by 6-inch, 9-inch, 6-inch, 6-inch by 4-in, 4-inch by 4-inch, 4-inch, and 3-inch Iron Pipe Ventilating Shafts	...	...	1,340
Number of Street Ventilating Manhole Covers and Gratings	...	...	6,767

CANAL BOATS.

The number of inspections of canal boats during the year was 4,647, and the condition of the boats and their occupants, as regards matters dealt with in the Acts and Regulations, is indicated by the following information :—

Twenty-six boats not registered by their present owners were found to be used as dwellings. Written notices were sent to the owners in 19 cases, and 7 verbal notices were given. The notices were complied with in 21 cases, 4 boats ceased to be used as dwellings, and one has not been seen in the district since the notice was served.

Forty-eight boats were found without certificates on board. Notices were sent to the owners in each case, and 46 were complied with. One has not been seen in the district since, and one is not now used as a dwelling.

Forty-three boats were found without the registered number painted on both sides of the boat. Notices were sent to the owners in each case, and the omission was rectified in 38 cases. Five have not been seen in the district since.

In 21 cases defective second bulkheads were reported. Notices were sent in each case, and 19 were complied with. The other two boats are not now used as dwellings.

In 29 boats the cabins required re-painting. Notices were sent to the owners in each case and 26 were complied with. One boat has not been seen in the district since, and 2 are not now used as dwellings.

Dirty cabins were reported in 24 cases. In 4, verbal notice was given to the masters, and in the others written notices were sent to the owners. In 18 cases the notices were complied with, and 4 not being complied with, informations were laid against the masters, and small fines inflicted. The cabins were subsequently cleaned. Two of the boats are not now used as dwellings.

Besides the foregoing, there were 237 instances of infringements of the Acts and Regulations, caused by leaky decks (85), general leaky condition of boats (21), no doors to lockers (14), broken scuttle covers (8), defective ventilation (22), broken floors (24), no water casks on board (51), defective stoves (9), no pumps (3). In each case notices were sent to the owners. Two hundred and eight of the notices were complied with, and 15 have not been re-inspected. Fourteen of the boats are not now used as dwellings.

Informations were laid in 9 cases, viz., non-separation of sexes (3), overcrowding (1), dirty cabins (4), and not being registered (1). In all cases fines were inflicted, varying from 1s. and 1s. costs to 10s. and 4s. 6d. costs. The total amount of fines was £2 17s. 6d.

One case of erysipelas occurred on a boat. The patient went to hospital, and the cabin and bedding on board the boat was disinfected. The usual certificate of disinfection was given to the master.

The entire number of the infringements of the Acts and Regulations referred to in the report occurred on 217 boats, in several instances the offence being repeated on the same boat.

Twenty-nine notices were sent to the School Board of children living on canal boats, and not attending any school.

The number of boats on the register is 615. Thirteen boats have been removed from the register, as it was ascertained that 11 had been broken up, and the other two being disused were removed from the register at the request of the owner. It is probable that other boats have been broken up or have left the district, but in the absence of definite evidence of this the boats remain on the register.

During the year 13 new boats were registered, 6 re-registered on account of changes of owners, and 2 re-registered on account of structural alterations. All boats re-registered on account of a change of owners, or the name of the boat being changed, or on account of structural alterations, retain their original numbers.

Copies of the registration certificate were issued to the owners of 14 boats, owing to the original ones being worn out.

There were 101 changes of masters reported, and the fact duly recorded on the register.

In 1898 the Canal Boat Inspectors were appointed as Port Sanitary Inspectors, an appointment which authorised them to inspect all classes of boats, as a difficulty arose in regard to certain boats plying upon the canal which were not registered under the Canal Boats Act, but which had been registered by the Board of Trade under the Merchant Shipping Act. Twenty-six visits were made to boats of this class, and all were found correct except one, in which the cabin was found to be in a dirty condition. A verbal notice was given to the owner and master, and the cabin was cleansed.

BAKEHOUSES.

The sanitary control of Bakehouses is dealt with under the Factory and Workshop Act and Public Health Acts, which prescribe the following regulations:—

Every bakehouse must have the whole of the interior walls and ceilings, and all passages and staircases of the bakehouse, painted, varnished, or lime-washed; if painted or varnished they must be washed with hot water and soap at least once in every six months, and the paint or varnish renewed once at least in every seven years; if the walls, &c., are lime-washed, the lime-washing must be renewed once at least in every six months.

No sleeping-place shall be permitted on the same level as a bakehouse, and forming part of the same building, unless it is effectually separated from the bakehouse by a partition extending from floor to ceiling, and unless ventilated by an external glazed window of at least nine superficial feet in area, of which area at least one-half may be fully opened for ventilation.

No water-closet or ashpit shall be within or communicate directly with the bakehouse. The cistern for supplying water to the bakehouse shall be separate and distinct from any cistern for supplying water to a water-closet. No drain shall have an opening within the bakehouse.

No place underground may be used as a bakehouse unless it was so used at the commencement of the Factory and Workshop Act, 1895.

All bakehouses must be kept in a cleanly state, free from effluvia arising from any drain, water-closet, or other nuisance; they must be properly ventilated, and possess at least 250 cubic feet of space for each person during ordinary working hours, and 400 cubic feet during overtime. A reasonable temperature must be maintained, and suitable sanitary conveniences provided for those employed in the bakehouse.

By Section 133 of the Workshop Act, 1901, if any child, young person, or woman is employed in a bakehouse, the Medical Officer shall, on becoming aware thereof, give a written notice to His Majesty's Inspector of Factories.

Where any room or place used as a bakehouse is in such a state as to be, on sanitary grounds, unfit for use as a bakehouse, the occupier is liable on summary conviction to a fine not exceeding forty shillings.

Fifty-nine bakehouses were added to the Register during 1902; about two-thirds of these are bread-bakers and confectioners, the remaining one-third are small pie and cake shops, which require supervision. This includes twenty-two bakehouses which are situated in the added area of Garston.

During the year two underground and two ground-floor bakehouses have ceased to be used for baking purposes, the ovens demolished, and the premises reconstructed for other purposes.

Number of Bakehouses on Register, 31st December, 1902..	...	1,019
„ Bakehouses added to Register during 1902	... ..	59
„ Bakehouses struck off Register during 1902	... ..	*115
„ Visits paid to bakehouses	... ..	3,987
„ Bakehouses found dirty (walls and ceilings)	... ..	469
„ Notices issued for lime-washing	... ..	297
„ Bakehouses lime-washed without notice...	... ..	172
„ Notices issued for defective ventilation...	... ..	15
„ „ „ to cease to use bakehouses for the purpose of domestic washing	... ..	1
„ „ „ to repair defective drains and waste pipes	... ..	8
„ „ „ to discontinue using bedrooms opening directly into bakehouses	... ..	1
„ „ „ to take drains out of bakehouses	... ..	5
„ „ „ to repair defective floors and walls	... ..	8
„ „ „ to repair defective ceilings	... ..	13
„ „ „ to provide suitable water-closet accommodation	... ..	5
„ „ „ to remove and cease to keep animals in bakehouse	... ..	2
„ „ „ to cease to use bakehouses unfit owing to insanitary conditions	... ..	2
„ „ „ to cleanse floors, windows, areas, tables and troughs	... ..	57
„ „ „ to cease to use as bakehouses places underground not in conformity with Act, 1901	... ..	6
„ „ „ to remove accumulations of foul water		1
„ „ „ „ „ trade refuse		6
„ „ „ to repair defective roofs	... ..	2
„ „ „ to remove water closet from being in direct communication with bakehouse		1
Number of References to Government Factory Inspector...	...	26

All the above notices were complied with by the owners or occupiers.

*This number includes ninety-two underground bakehouses, which were not so used at the passing of the Factory and Workshops Act, 1901.

The number of underground bakehouses in use in the city at the end of the year was approximately 390.

Important legislation affecting underground bakehouses comes into effect on January 1st, 1904. The following extracts of the Factory and Workshop Act, 1901, indicates the nature of the requirements:—

Section 101.—(1.) An underground bakehouse shall not be used as a bakehouse unless it was so used at the passing of this Act.

(2.) Subject to the foregoing provision, after the first day of January one thousand nine hundred and four an underground bakehouse shall not be used unless certified by the district council to be suitable for that purpose.

(3.) For the purpose of this section an underground bakehouse shall mean a bakehouse, any baking room of which is so situate that the surface of the floor is more than three feet below the surface of the footway of the adjoining street, or of the ground adjoining or nearest to the room. The expression “baking room” means any room used for baking, or for any process incidental thereto.

(4.) An underground bakehouse shall not be certified as suitable unless the district council is satisfied that it is suitable as regards construction, light, ventilation, and in all other respects.

(5.) This section shall have effect as if it were included among the provisions relating to bakehouses which are referred to in section twenty-six of the Public Health (London) Act, 1891.

(6.) If any place is used in contravention of this section, it shall be deemed to be a workshop not kept in conformity with this Act.

(7.) In the event of the refusal of a certificate by the district council, the occupier of the bakehouse may, within twenty-one days from the refusal, by complaint apply to a court of summary jurisdiction, and if it appears to the satisfaction of the court that the bakehouse is suitable for use as regards construction, light, ventilation, and in all other respects, the court shall thereupon grant a certificate of suitability of the bakehouse, which shall have effect as if granted by the district council.

(8.) Where any place has been let as a bakehouse, and the certificate required by this section cannot be obtained unless structural alterations are made, and the occupier alleges that the whole or part of the expenses of the alterations ought to be borne by the owner, he may by complaint apply to a court of summary jurisdiction, and that court may make such order concerning the expenses or their apportionment as appears to the court to be just and equitable, under the circumstances of the case, regard being had to the terms of any contract between the parties, or in the alternative the court may, at the request of the occupier, determine the lease.

Section 102.—As respects every retail bakehouse, the provisions of this Part of this Act shall be enforced by the district council of the district in which the retail bakehouse is situate, and not by an inspector; and for the purposes of this section the medical officer of health of the district council shall have and may exercise all the powers of entry, inspection, taking legal proceedings and otherwise of an inspector.

In this section the expression “retail bakehouse” means any bakehouse or place, not being a factory, the bread, biscuits, or confectionery baked in which are sold, not wholesale, but by retail, in some shop or place occupied with the bakehouse.

A question as to compensation for refusal of a certificate elicited the following reply from the Home Secretary:—

“The deliberate intention of Parliament was made plain when Section 101 of the Factory Act was passed in 1901, prohibiting the continued use of underground bakehouses after January 1st, 1904, unless certified by the district council to be suitable for the purpose. In addition to the time allowed before this new requirement comes into force, Sub-sections 7 and 8 of that section provide for an appeal against the refusal of a certificate, and enable a court, if it thinks fit, on complaint by the occupier, in a case where a certificate cannot be obtained unless structural alterations are made, to adjust the expenses between owner and occupier or to determine the lease. There appears, therefore, no ground for a Bill such as the hon. member indicates.”

During the year thirty-four underground bakehouses have ceased to be used for baking purposes. This decrease in the use of underground bakehouses may be accounted for by recent legislation regarding the use of underground bakehouses, which has induced occupiers to obtain more suitable premises on the ground floor. Several large firms occupying small underground bakehouses in various parts of the city have already erected new ground floor bakeries of modern design, and have given up the use of the old underground bakehouses. Other large firms are erecting new ground-floor bakeries to replace existing underground bakehouses.

SHOP HOURS ACT, 1892—5.

The object of the Act is to prevent the employment of young persons for such an excessive number of hours as will prejudice the health of these employés.

During 1902, under the above Act, there have been 3,845 visits paid to shops during the day, and 2,290 visits made after six o'clock; in 5,565 instances the shops were found to be correct, and 570 incorrect.

The persons concerned have generally evinced readiness to comply with the requirements of the Act, and have thus lessened the difficulties in its administration. The number of occasions in which it was necessary to take police proceedings during the last three years is small.

	<u>1900.</u>	<u>1901.</u>	<u>1902.</u>
Number of Shops visited (day)	3,418	3,889	3,845
„ „ found incorrect	331	347	324
„ „ visited after 6 p.m.	2,527	2,529	2,290
„ „ „ found incorrect	227	258	246
„ copies of Act distributed by the Inspectors	158	127	0
„ Informations for excessive hours	0	4	0
„ Convictions	0	3	0
„ Informations for not exhibiting Notice of Act and Require- ments as to hours of work	6	3	2
„ Convictions	6	3	2
Total number of Informations	6	7	2
„ „ Convictions	6	6	2
Total Amount of Fines and Costs... ..	£8 7s. 0d.	£7 15s. 0d.	£2 9s. 0d.

SEATS FOR SHOP ASSISTANTS ACT, 1899.

The object of the Act is to provide seats for female shop assistants.

	<u>1900.</u>	<u>1901.</u>	<u>1902.</u>
Visits for the purposes of the Act	247	379	209
Found correct	231	344	203
Seats being provided	16	35	6

The above table relates to special visits for the purposes of the Act, but in administering the Shop Hours Act notice is also taken of the provision of seats for female shop assistants.

FACTORY AND WORKSHOP ACT, 1901.

The Inspectors appointed under the above Acts for sanitary purposes have visited a large number of Workshops, the summary of which is appended:—

SUMMARY OF VISITS PAID TO WORKSHOPS.

Bamboo Workers.....	12	Marble Masons.....	31
Basket Makers	12	Marine Stores	786
Block Makers	11	Mattress and Bed Makers	34
Bootmakers	135	Metal Polish Makers	8
Bottlers	15	Milliners	127
Bottle Washers.....	7	Mineral Water Manufacturers	14
Box Makers	6	Musical Instrument Makers	21
Brick Makers	11	Paint and Varnish Manufacturers..	7
Brush Makers	14	Paper Cutters, &c.	34
Cabinet Makers and Joiners	408	Perfume Manufacturers.....	9
Canned Goods	14	Pickle and Sauce Manufacturers ...	53
Cap Makers	16	Picture Framers	12
Card Gilders	12	Pipe Mounters	10
Carvers and Gilders.....	44	Plumbers	18
Chair Makers	13	Preserves.....	7
Chemists' Sundries Manufacturers	14	Relief Stampers.....	6
Coach Builders.....	21	Rubber Goods Manufacturers	15
Confectioners	70	Sack and Bag Makers.....	22
Coopers	25	Saddlers	11
Cork Cutters.....	14	Sailmakers	6
Cotton Sorters	49	Sign Writers.....	24
Cycle and Bassinette Makers	19	Smiths	98
Dressmakers	511	Tailors	1,755
Drysalts	9	Tarpaulin Makers	13
Electricians	10	Trunk and Portmanteau Makers ...	17
Engravers... ..	26	Umbrella Makers	35
Firewood Manufacturers	8	Underclothing Makers	104
Fish Curers	5	Upholsterers	60
Flag Makers ..	5	Watchmakers and Jewellers	44
French Polishers	86	Wheelwrights	13
Furriers	17	Wig Makers	17
Galvanisers	9	Wireworkers	13
Image Makers	10	Various	107
Knitters	5		
Laundries	447		
		Total.....	5,621

In addition to the above, 86 workplaces were visited, consisting of Kitchens, Hotels, Restaurants, &c. In 40 instances these were found to be incorrect in regard to cleanliness, ventilation and sanitary conveniences. Notices were issued on the responsible persons and the work carried out.

The number of visits paid to workshops, &c., the number and character of the Sanitary defects found, and the action taken, are indicated in the following table:—

	1901.		1902.
Visits to Workshops	5,828	...	5,621
Workshops found incorrect	1,746	...	1,790
Number of Workrooms, dirty walls	568	..	474
„ „ „ ceilings	572	..	477
„ „ „ floors	22	...	46
„ „ „ urinals... ..	3	...	13
„ „ „ water-closets	77	...	84
„ „ „ lavatories	3	...	10
„ „ insufficiently ventila- ted, arising from structural defects or from want of attention	106	...	48
„ „ found overcrowded... ..	6	...	5
„ Defective Drains and Water- closets; also insufficient water- closet accommodation, and other nuisances... ..	465	...	511
„ Notices issued { upon Owners	174	593	187
„ { upon Occupiers	419		
„ „ not complied with	0	...	1
„ Informations	19	...	10
„ Fined	7	...	4
„ of References to Government Factory Inspector... ..	51	...	77
„ „ to Building Surveyor	1	...	0
„ of References to City Engineer	3	...	0
„ „ Water Engineer	0	...	0
„ Workshops inspected, protected... ..	123	168	174
„ „ „ non-protected	45		
„ Workrooms measured	119	...	180
„ Workrooms closed owing to insani- tary conditions	4	...	5
Amount of Fines and Costs ...	£13 15 0		£2 9 6
Separate closet accommodation provided for females in workshops where both sexes are employed	34	...	19
W.C. accommodation provided for males	18	...	11
Total	52		30

HOME WORK.

In accordance with Section 107 of the Factory and Workshops Act and the Home Work Order of December, 1901, 80 employers sent in lists of outworkers, giving the names and addresses of 352 employees. There were also 22 resident outside the City, and their names and addresses were forwarded to the Medical Officer of Health of the respective districts in which they lived. The 352 within the City were visited by the District Sanitary Staff, and in 97 instances the premises were found to be Domestic Workshops, constituting the sole or principal means of existence of the workers. In the remaining 255 cases the home work was found to be an additional source of income only.

The following table denotes the results of the visits made under this section :—

Number of Domestic Workshops	...	...	...	...	...	97
„ „ „	found dirty	...	...	...	...	3
„ „ „	structurally defective	...	...	...	...	37
„ „ „	otherwise insanitary	...	...	...	...	2
„ „ „	visits paid	...	...	...	...	156
Number of other Outworkers' premises	...	...	...	...	...	255
„ „ „	found dirty	...	...	...	...	16
„ „ „	structurally defective	...	...	...	...	95
„ „ „	otherwise insanitary	...	...	...	...	26
„ „ „	visits paid	...	...	...	...	409

Notices were issued on the owners and occupiers to carry out the necessary work.

SMOKE NUISANCES.

Proceedings for the abatement of Nuisances caused by the emission of excessive smoke from factory chimneys or from steamers, were taken under the Liverpool Sanitary Amendment Act, 1854, sections 24 and 25, and the Liverpool Improvement Act, 1882, section 77, with the following results:—

						<u>1901.</u>	<u>1902.</u>
Number of reports of excessive smoke from	Manufactories	...				421	323
"	"	"		Steamers in river		382	376
"	"	"	"	" dock		55	42
						<u> </u>	<u> </u>
	Total	...	...	...	..	858	741
						<u> </u>	<u> </u>

Admonished by the Health Committee or written to in respect to nuisances caused by the emission of excessive smoke:—

Manufacturers	...	...	...	...	...	5	13
Steamers	...	...	...	...	...	7	6
						<u> </u>	<u> </u>
	Total	...	...	...	...	12	19
						<u> </u>	<u> </u>

				<u>1901.</u>	<u>1902.</u>
Chief Inspector and Assistants gave	M'facturers	528	Cautions	505	Cautions
"	"	"	Steamers	57	64
				<u> </u>	<u> </u>
	Total...	...		585	569
				<u> </u>	<u> </u>

Number of enquiries respecting Owners	<u>277</u>	<u>379</u>
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				<u>1901.</u>	<u>1902.</u>
Informations against	Manufactories	416	310
"	"	Steamers in river...	...	306	308
"	"	" dock...	...	55	40
				<u> </u>	<u> </u>
	Total	...	...	777	658
				<u> </u>	<u> </u>
Acquitted or withdrawn,	Manufactories	...	...	1	3
"	"	Steamer cases	...	13	12
				<u> </u>	<u> </u>
	Total	...	...	14	15
				<u> </u>	<u> </u>

							<u>1901.</u>	<u>1902.</u>
Fined, Manufactories	...	...	...	...	...	...	415	307
„ Steamers	...	...	...	...	...	...	348	336
Total	...	...	...	...	...	..	<u>763</u>	<u>643</u>

							<u>1901.</u>	<u>1902.</u>
Amount of Fines, Manufactories	...	£532	16	0	£612	0	0	
„ „ Steamers	...	480	7	9	599	10	7	
Total	...	<u>£1,013</u>	<u>3</u>	<u>9</u>	<u>£1,211</u>	<u>10</u>	<u>7</u>	

Nuisances arising from the firing of domestic chimneys are controlled by the Police.

SMOKE INSPECTION.

It will be noticed that there is a large falling off in the number of reports relating to excessive smoke from manufactories. This is accounted for chiefly by the greater care exercised by the owners of furnaces as well as by the heavier fines which are now imposed. The fines for smoke from manufactories, for the year, amounted to £612 0s. 0d. for 310 cases, against £532 16s. 0d. for 416 cases for 1901.

It is also owing to the fact that the system of concentrating the work in one large building, with all the newest appliances for smoke prevention, instead of having it carried on in a number of small factories scattered over the City, has been further adopted by manufacturers during the year.

Out of 376 cases of excessive smoke from Steamers in the river which were observed, 35 vessels were bound to foreign ports or passing through this port, the owners of 26 Steamers could not be traced, and in 3 cases the Steamers were towing other vessels in emergency, and consequently no proceedings were taken.

Complaints received of smoke from defective house flues,							<u>1901.</u>	<u>1902.</u>
„ and from low chimneys	...	...	...	...	...	...	131	107
Visits relating thereto...	...	...	...	...	...	...	<u>719</u>	<u>536</u>
Chimneys raised in consequence of complaints	...	...	...	...	...	...	44	30
Flues altered and repaired	...	...	...	...	...	...	25	22
Attention promised	...	...	...	...	...	...	57	50
Referred to other departments	...	...	...	...	...	...	1	1
Frivolous complaints	...	...	...	...	...	...	<u>4</u>	<u>4</u>
Total complaints dealt with...	...	...	...	...	...	...	<u>131</u>	<u>107</u>

From careful observations during the course of inspections, it has been found that the nuisance caused by the emission of excessive smoke from chimneys is due to the following causes:—

1. Improper construction of the furnaces, and the want of sufficient boiler room.
2. Inferior quality of the fuel used.
3. Improper firing and want of attention on the part of the stokers.

These causes are usually associated; even an improperly constructed furnace, if fed with a good quality of fuel and attended to by a careful and skilful man, can be so used as to avoid making unnecessary smoke, and, at the same time, the utmost amount of work of which it is capable can be obtained from it. A furnace of the best construction and fitted with the most approved appliances for preventing smoke, may, on the other hand, give rise to the greatest nuisance owing to improper attention and the use of poor fuel.

Mechanical stokers, many forms of which are now used by manufacturers, when properly used, effect a saving of 11 to 20 per cent. in the cost of the coal used, together with a considerable diminution of the quantity of smoke emitted from the chimney.

OFFENSIVE TRADES.

Applications for permission to carry on the following offensive trades were made during the year, and a report by the Medical Officer of Health on each application was submitted to the Health Committee:—

Premises.	Business.	Granted.	Refused.	Date, 1902.
Carruthere Street	Knacker's Yard.....	1	—	2nd January.
Bankhall Lane	Soft Soap.....	1	—	30th January.
41, Leeds Street	Beef Dripping	1	—	20th Feb.
Borax Street, Old Swan	Tripe Dressing	1	—	17th April.
141, Vauxhall Road.....	Gut Scraping.....	1	—	22nd May.
41, Leeds Street.....	Fat Melting	—	1	14th August.
51 to 59, Freemasons' Row.....	Fat and Tallow Melting	1	—	28th August.
86, Melrose Road	Tripe Dressing	1	—	27th Nov.

In cases in which permission is granted, conditions are imposed requiring that the premises be put in proper order to the satisfaction of the City Engineer and the Medical Officer of Health, that no public nor private nuisance be caused, and that the business be discontinued whenever the Council shall so require.

The number of inspections of premises where offensive trades are carried on was 1,041 as against 1,268 in 1901.

					<u>1901.</u>	<u>1902</u>
Total No. of Visits to Bone Boilers...	...	...	...	...	89	133
„ Fell Mongers	...	...	...	...	38	45
„ Soap Boilers	...	...	...	...	217	178
„ Fat and Tallow Melters	...	...	...	...	277	291
„ Tripe Boilers	...	...	...	...	240	240
„ Gut Scrapers	...	...	...	...	117	129
„ Fish Skin Dressers...	...	...	...	...	16	11
„ Fish and Oil Refineries	...	...	...	...	0	2
„ Tanneries	...	...	...	...	81	66
„ Knackers' Yards	...	...	...	...	125	88
„ Paint and Resin Works	...	...	...	...	18	17
„ Stearine Works	...	...	...	...	18	7
„ Palm Oil Works	...	...	...	...	30	53
„ Manure Manufacturers	...	...	...	...	2	0
„ Cotton Seed Oil Works	...	...	...	...	0	18

KNACKERS' YARD RETURNS.

	Horses Destroyed.	Horses taken in Dead.	Asses Destroyed.	Cows Destroyed.	Other Beasts.
Holme Street ...	263	1,412	31	48	1

MARINE STORES.

					<u>1901.</u>	<u>1902.</u>
Number of Visits	...	...	...	...	929	606

MANURE YARDS AND WHARVES.

					<u>1901.</u>	<u>1902.</u>
Number of Visits	...	...	...	...	517	505

STABLES

The number of visits was 5,980. Conditions prejudicial to health arise from stables on account of defective construction, or of improper situation, or from neglect of lighting, ventilation and cleansing of the stables. Under existing legal powers, great difficulty is experienced in dealing with stables, and complaints are very frequent of nuisances occasioned by the causes indicated, the most frequent, perhaps, being neglect of cleanliness.

A large number of stables are either so defective, or so little care is taken of them, that the visits of the inspectors are necessary almost every day, in order that they may be under practically constant observation.

The Health Committee have endeavoured to procure adequate powers to enable them to make bye-laws to deal with stables (*a*) for regulating the lighting, ventilation, cleansing and draining of stables, whether erected before or after the passing of this Act; (*b*) for regulating the situation and mode of construction of stables to be erected within the City. At present there are no such bye-laws.

					<u>1901.</u>	<u>1902.</u>
Number of Visits to stables	...	...	...	...	6,211	5,980

FEMALE SANITARY STAFF.

Much of the time of the Female Sanitary Staff has, as usual, been devoted to the inculcation of habits of personal cleanliness amongst women and children, and to the house to house visitation, fully explained in previous reports.

As heretofore, many enquiry visits have been paid to the houses where fatal cases of Infantile Diarrhœa have occurred; enquiries have also been made into the circumstances attending deaths from suffocation.

A new feature of the work, and one which has been largely successful is the reporting by School authorities of scholars attending in a dirty and verminous condition. These children are systematically visited in their homes, until a marked improvement in their personal condition is maintained.

This branch of the work has been much appreciated by the teachers.

Ignorance still prevails with regard to the correct feeding of infants, and on this subject instruction is constantly being given.

Workshops in which women are employed are inspected systematically and upon complaint.

STATISTICS OF WORK OF FEMALE SANITARY STAFF.

						<u>1901.</u>	<u>1902.</u>
Number of Street Houses examined ...	...	...	...	...	...	13,872	18,066
„ Court „ „ ...	...	...	...	...	...	2,209	2,496
„ Cellars ...	...	...	...	...	...	1,772	7,666
„ Families found dirty ...	...	...	..	...	...	1,487	1,321
„ Re-visits to Families ...	...	...	...	...	...	12,800	15,374
„ Houses found dirty...	...	...	...	...	...	5,651	6,531
„ Cellars „ „ ...	..	..	...	...	...	435	1,707
„ Notices issued to cleanse dirty premises...						351	390
„ „ „ floors and				woodwork }		104	170
„ References to Sanitary Inspectors ..						4,457	4,734
„ „ „ Lodging-house Inspectors...						69	140
„ „ „ Workshop Inspectors ...						9	19
„ „ „ Veterinary Department ...						4	2
„ „ „ City Engineer ...	...	...				287	340
„ „ „ Water Engineer ...	...	...				412	473
„ „ „ Building Surveyor ...	...	...				—	—
„ „ „ School Board ...	...	...				7	80
„ „ „ The Shelter, Islington ...						59	90
„ „ „ Relieving Officer ...	...	...				—	—
„ Enquiry Visits ...	...	...	...	...	...	4,069	656
„ Sterilised Milk Dépôt Visits ..	...					320	924
„ Visits to Workshops ...	...	...	...			146	157
„ Workshops found incorrect ...	...	...				41	38
„ Workshop Notices ...	...	...	...	...		1	—

BATHS AND WASH-HOUSES.

The Report of the Superintendent Engineer of the Corporation Baths and Wash-houses furnishes ample evidence of the extent to which the advantages offered by these establishments are availed of by the public, more especially perhaps by those sections of it who have not washing facilities in their homes.

As regards the washing-baths, arrangements have been made by which free tickets are distributed by the Female Sanitary Staff, to be made use of by the poorer classes, both for themselves and for their children. Cases in which the practice has been resorted to have been very successful, the washing-bath being far more effectual than anything which can be adapted in the poorer classes of dwelling.

It would appear that there is a wide scope for the use of baths of this character by women and children in the lower districts of the City.

INFECTIOUS DISEASE IN SCHOOLS.

In order to prevent the extension of infectious disease in schools, the earliest possible information should be given to the Head Master, the Head Mistress, or Principal, when sickness exists at the homes of the scholars.

Usually the first intimation of such sickness is received by the Medical Officer, under the terms of the Notification Act, which, however, does not include measles and whooping-cough, both of which are liable to spread extensively amongst children of school age; these cases are notified by the school attendance officers, by inspectors, by parents, by doctors, and others. It is part of the duty of the district inspector to forthwith warn the parents, or those in charge, that the children must be kept from school until fourteen days after the necessary disinfection has been carried out.

The information obtained is also sent by postcard the same day to the Head Master of the school the children attend if it is a Board School, or to the Principal in the case of a Private School.

When the source of infection is removed (either by removal of the patient to hospital, or by the recovery or death of the patient), the house and bedding are disinfected by the officers of the Public Health Department. At the expiration of a fortnight from the date of disinfection, the school visitor is notified to visit the house, and if no sickness of any kind has occurred in the interval intimation is sent to the Head Teacher of the school to re-admit the children.

In the case of measles and chicken-pox, disinfection is carried out with the consent of the occupier of the house; the children are not allowed to return to school until a fortnight after the sickness has ceased to exist.

In cases of whooping-cough, ringworm, &c., only the affected child is kept from school. Ringworm, scabies, and ophthalmia may last indefinitely unless properly dealt with, and no child with any trace of these diseases should be admitted to school.

The notices sent to the schools for the purpose of notifying the existence of infectious disease at the home of a pupil are accepted by the Education Department as a valid reason for the non-attendance of the children at school, and qualify them to receive any benefits which regular attendance would have entitled them to.

When necessary, a certificate is furnished to the school authorities, stating that the pupil was absent on account of infectious sickness at home.

It must be borne in mind that although the child may be free from infection, and, so far as the risk of infection is concerned, may with perfect safety return to school, yet the child may not be sufficiently recovered physically to undertake at once the full work and discipline which attendance at school entails.

The permission of the Health Department to return to school, therefore, implies nothing further than freedom from infection.

It may be regarded as a rule, that all children suffering from an infectious disorder should be excluded from school so long as they are likely to retain any infection; this condition is one which may involve exclusion for some time after the patient is apparently convalescent.

It is equally necessary that children coming from houses, any inmate of which is suffering from infectious sickness, should also be excluded, because in the great majority of instances, if not in all of them, it is impossible to effectually isolate a case of infectious sickness in an ordinary household, especially within the homes of children of the class who attend the public elementary schools.

Hardship really is minimised by a careful application of the powers to exclude individual scholars, because unless this is attended to it is quite possible that disease may rapidly spread to an extent which would render it necessary to close the school altogether.

As regards the influence of school closure upon the prevalence of sickness, as indicated by the numbers of cases reported to the Medical Officer of Health, it is interesting to note the experience of four years in Liverpool in regard to Measles among children attending elementary schools. The subjoined table indicates the number of cases reported during one month *before* the holidays, and one month *after* the holidays, precisely the same machinery for notification being in force in each period. It would also appear that the longer the holidays the greater the effect in lessening the prevalence of the sickness.

Summer holidays.	DURING—	Cases of measles reported.	Winter holidays.	DURING—	Cases of measles reported
1896.	One month before the holidays ...	283	1896.	One month before the holidays ...	143
	One month after the holidays ...	35		One month after the holidays ...	115
1897.	One month before the holidays ...	991	1897.	One month before the holidays ...	403
	One month after the holidays ...	131		One month after the holidays ...	171
1898.	One month before the holidays ...	452	1898.	One month before the holidays ...	205
	One month after the holidays ...	137		One month after the holidays ...	75
1899.	One month before the holidays ...	1325	1899.	One month before the holidays ...	501
	One month after the holidays ...	182		One month after the holidays ...	217
<i>Average of 4 years.</i>					
	One month before the holidays ...	763		One month before the holidays ...	313
	One month after the holidays ...	121		One month after the holidays ...	144

The summer holidays extend to about five weeks; the winter holidays from a fortnight to three weeks.

The effect of closure of schools in checking the spread of measles was again marked in 1901, when the disease was very prevalent in the early months of the year. On the 9th March all departments of five schools and the infants' departments of 124 schools were closed, until after the Easter Holidays, owing to infectious sickness.

No. of cases in month preceding notice to close referred to above...	2,075
No. of cases in month after Easter holidays	616

Measles again became very prevalent towards the end of September, 1902.

From the 1st October to the end of the year, all the departments in 8 schools, and the infants' departments of 31 schools, during one period or another, were closed owing to infectious sickness.

NOTICES TO MASTERS OF SCHOOLS AND LIBRARIANS.

The arrangements have been continued with the School Board that postcards shall be sent to the Board and to the Head Masters of the various schools informing them when children from infected houses attend their schools. 11,361 cards were sent last year, as against 9,965 in the preceding year.

Books borrowed from Lending Libraries which have been found in infected houses have been taken to the Disinfecting Station, and either destroyed or disinfected and returned. In the case of books which have been destroyed, compensation has been paid under the Public Health Act.

PUBLIC ELEMENTARY SCHOOLS.

VISITS MADE BY SANITARY INSPECTORS.

	1901.	1902.
No. of Visits to Schools	3,216	2,889
„ Waterclosets and Latrines found dirty or defective	173	150
„ Notices issued for defects	70	69
„ „ „ dirty closets	28	24

THE AMBULANCE AND DISINFECTING STAFF.

The following table shews the number of patients removed by Officers of the Ambulance Staff, and the Hospitals to which they were taken :—

City Hospital North, Netherfield Road.	City Hospital South, Grafton Street.	City Hospital, Park Hill.	Brownlow Hill.	City Hospital East, Mill Lane.	City Hospital, Priory Road.	David Lewis Northern Hospital.	Royal Infirmary.	Smithdown Road.	Southern Hospital.	Stanley Hospital.	City Hospital, Fazakerley.	Walton Workhouse.	Port Sanitary Hospital.	Hahnemann Hospital.	Garston Hospital.	Total.
867	586	1698	154	894	508	29	20	20	20	4	252	1	10	3	11	5,077

For the removal of patients to hospital, and for the removal of infected bedding, and its return after disinfection, an adequate ambulance staff is maintained.

Four ambulance carriages are in use for the different forms of infectious disease. Bedding and clothing, after disinfection, are returned home by a staff and conveyance entirely distinct from that which removed them in the infected state. In all cases where it is found desirable to destroy infected articles full compensation is paid.

All cases of Smallpox and all cases of Typhus Fever, with very rare exceptions, are removed to Hospital, and a special Inspector revisits the house from whence the patient was removed to ascertain whether any further sickness has developed. These inquiries are made daily for 14 days and at intervals of a day or two during the following fortnight, and any case of sickness, however trifling it may appear to be, is at once reported and visited by a medical man. Friends of the patient, and others who are known to have been directly or indirectly in contact with him are also visited at their homes. By these inquiries, persons who may be incubating the disease are discovered and removed to the hospital at the earliest possible stage, and often before any

serious risk of infection has arisen. Without these inquiries, which have occasioned no inconvenience to anyone, the patients would have remained at home for a longer period, constituting centres of infection to the neighbourhood, and it is largely to systematic inquiry and supervision, and the promptness of action taken upon available information, that the City owes the continued immunity from formidable kinds of infectious disease. The absence of friction indicates the care and intelligence exercised by the Inspectors in carrying out this system.

The collection, removal, disinfection and return of infected bedding has been carried on as hitherto by the Ambulance Staff.

It has been found that in many instances in which compensation for clothing had been given in money to the poorer classes of people, that the money was spent in drink, and the people left without clothing. As a consequence of this, an arrangement was made with a firm of repute, to supply articles equivalent in value to those which had been destroyed, thus preventing an improper use of the money. There were difficulties incidental to this method, and the present plan is to keep at the dépôt a stock of mattresses, bedding, &c., and to give it out to suitable applicants, whose clothing or bedding have been destroyed on account of infection, under the Public Health Act.

Owing to the delays and difficulties which arose from time to time in causing compliance with notices served upon owners to strip the wall-paper from the walls of infected rooms, this work has been undertaken by the Disinfecting Staff.

As soon as the infected wall-paper has been stripped, and the house ready for re-papering or other work, an intimation of the fact is sent to the owner.

In all cases of infectious disease the houses were disinfected by a trained staff, free of cost, with sulphurous gas; but whenever there was sickness in any room of the house, disinfectants were given to the tenants for use in the sick room until the sulphurous gas could be used safely. No house is considered properly disinfected until sulphurous gas has been used, and the wall-paper, previously sprayed with solution of perchloride of mercury, stripped. The wall-paper is conveyed in sacks, specially

provided for the purpose, to the refuse-destroyer and burnt. The existence of infectious sickness necessitates many visits by the persons in charge of disinfection, as the householder frequently omits to send information when the premises are ready. There were in all 15,908 visits paid during the year to houses for the purpose of disinfection, the number of houses completely disinfected being 9,171.

INFECTED HOUSES.

	<u>1901.</u>	<u>1902.</u>
Number of Infected Street Houses Inspected ...	4,366	6,647
„ „ Court „ „ ...	306	289
„ „ Cellars „ „ ...	43	71
„ Notes to Owners after stripping and cleansing	3,834	6,430
„ Notices to Occupiers to strip and cleanse premises of £30 rental and over	202	*—
„ „ Houses Re-inspected	202	*—
„ Enquiries	19,855	57,694

There is an increase of 2,292, compared with the preceding year, in the number of houses requiring to be dealt with on account of infection, also an increase of 37,839 enquiries relating to same. *Since the beginning of 1902, the stripping of the walls of all infected houses has been carried out by the Officers of the Health Committee.

INFECTED PREMISES CLEANSED BY DISINFECTING STAFF.

	<u>1901.</u>	<u>1902.</u>
Houses	6,771	10,839
Rooms	15,400	25,032

There is an increase of 9,632 rooms stripped by the Disinfecting Staff, as compared with the previous year, due mainly to increased prevalence of scarlet fever, and to the action taken in regard to phthisis.

THE DISINFECTING APPARATUS.

The number of articles disinfected at the various Apparatus during the year amounted to 148,226.

DATE. 1902.	Number of Beds.	Number of Mattresses.	Number of Pieces of Bedding.	No. of Pieces of Wearing Apparel, &c.	Total Number of Articles.
January	799	343	5,388	1,872	8,402
February	857	497	8,361	18,134	27,849
March	886	499	6,651	3,088	11,124
April	852	324	7,143	11,077	19,396
May	878	347	6,066	2,532	9,823
June	758	389	5,109	1,674	7,930
July	713	291	4,084	5,749	10,837
August	709	356	5,144	1,693	7,842
September	663	227	4,218	2,616	7,724
October	745	270	5,519	5,195	11,729
November	1,050	644	8,181	4,597	14,472
December	995	694	6,804	2,605	11,098
Totals	9,905	4,881	72,668	60,832	148,226

The number of articles destroyed at the various Apparatus during the year amounted to 1,968, compensation being paid in conformity with the provisions of the Public Health Act.

DATE. 1902.	Number of Beds.	Number of Mattresses.	Number of Pieces of Bedding	No. of Pieces of Wearing Apparel, &c.	Total Number of Articles.
January	11	28	21	2	62
February	45	88	191	30	354
March	42	58	71	125	296
April	25	61	46	17	149
May	16	46	14	6	82
June	26	53	48	21	148
July	28	62	43	27	160
August	20	59	28	6	113
September	21	46	37	5	109
October	19	35	33	0	87
November	35	85	59	5	184
December	38	79	78	29	224
Totals	326	700	669	273	1,968

PRINCE'S DOCK MORTUARY.

The Mortuary at the Prince's Dock is for the reception of the bodies of persons who have been drowned, killed, &c., and upon which the Coroner desires to hold inquests. Bodies are taken to this Mortuary by the police, and when it may be necessary to make post-mortem examinations, any medical gentleman may have the assistance of an inspector on sending a communication to the Ambulance Superintendent, 54, Gascoyne Street.

BODIES REMOVED TO THE PRINCE'S DOCK MORTUARY.	
Number from River.	Number from City.
4	172

FORD STREET MORTUARY AND DISTRICT MORTUARIES.

BODIES REMOVED TO MORTUARIES.						
Green Lane.	Lark Lane.	Wavertree.	Ford Street.	Park Hill.	Smithdown Road.	TOTAL.
2	6	...	246	...	2	256

The Mortuary in Ford Street is provided for the reception of bodies, which cannot be kept at the homes in which death had taken place, without injury to the health of the inmates. The address of the caretaker is 65, Gascoyne Street.

The District Mortuaries, it will be seen, are seldom used. For the convenience of juries, as well as for other reasons, it is preferable that bodies should be conveyed to the Central Mortuaries.

CREMATORIUM.

The Crematorium in Anfield Cemetery is availed of by an increasing number of persons as a means of reverent disposal of the dead by cremation, but the system has not yet found the favour which it does in many important centres of population throughout Europe. The building is of attractive appearance, and the surroundings are appropriate.

PROCEEDINGS UNDER THE DISEASES OF ANIMALS ACT, 1894.

The duties of the Inspectors under the Diseases of Animals Act, 1894, are to visit cattle steamers, both foreign and cross-channel, for the purpose of seeing that the provisions of the Foreign Animals Order, 1895, and the Animals Transit Order, 1895, are carried out.

Cattle steamers are examined as to fittings, ventilation, &c., and supervision is exercised in regard to cleansing and disinfection after animals are landed. Overcrowding or injury to animals is reported.

Cattle trucks and horse boxes are examined at railway stations, as to fittings, cleansing and disinfection, and the railway pens supervised.

Lairages and sale yards are visited to ascertain that they are cleansed and disinfected in accordance with the regulations of the City Council.

The Diseases of Animals Act relates in the main to certain diseases communicable amongst cattle, sheep and swine, and provides for the separation of diseased animals from healthy ones, for the disinfection and cleansing of vessels, trucks, &c., in which animals have been carried, and it defines the action to be taken to limit and prevent the extension of disease. It also deals with certain forms of disease communicable by animals to man.

The Board of Agriculture, under the powers of this Act, issue orders from time to time dealing with diseases of animals, or with their protection during transit. The Board also prescribes the manner under which animals may be imported or moved from place to place.

The Swine Fever Order, dated 28th August, 1901, made provision for the cleansing and disinfection of pig dealers' premises, and vehicles used by pig dealers for the conveyance of swine from steamers through the City to pig dealers' premises. The Order came into force on 14th October, 1901, and due notice was given of the date on which the Order would take effect.

The accompanying table gives the statistics of the proceedings taken under the Act or under the Orders of the Board of Agriculture:—

Number of Visits to Railway Stations, including inspec-				1901.	1902.
	tions made on Sundays	...	...	2,620	3,920
„	Inspections of pens	...	...	103,716	105,372
„	found clean	...	...	78,963	72,696
„	„ dirty and cleansed before being used.	...	...	24,753	32,676
„	Inspections of Trucks...	...	...	46,640	60,149

	1901.	1902.
Number found clean	41,699	54,090
„ „ dirty and cleansed before being used, or leaving the City dirty	4,941	6,059
„ Inspections of Horse Boxes	1,188	621
„ found clean	800	309
„ „ dirty and cleansed before being used, or leaving the City dirty	388	312
„ Inspections of Vessels... ..	8,892	9,089
„ found clean	3,960	3,792
„ „ dirty and cleansed before being used, or going to Sea without cattle or cargo	4,932	5,297
„ Informations for dirty vessels used before being cleansed	1	—
Number of Inspections of Gangways	9,908	9,206
„ found clean	7,545	7,738
„ „ dirty and cleansed before being used	2,363	1,468
„ Inspections of Lairage and Sale Yards	5,578	5,116
„ found clean	3,877	3,213
„ „ dirty and cleansed before being used	2,701	1,903
„ „ Carts used to convey Pigs	422	1,986
„ „ „ „ „ found clean	381	1,733
„ „ „ „ „ dirty	41	253
„ „ „ „ „ cleansed before being used	40	253
„ Fined	1	—
„ Informations for landing broken fodder and dung	1	—
„ „ „ not cleansing trucks before being used	—	—
„ „ „ not providing battens on footholds for pens on vessel	—	—
„ „ „ neglecting to cleanse Cart after conveying Swine	1	—
Total Number of Informations	3	—
„ Fined	3	—
Amount of Fines and Costs	£9 13s. 6d.	—

<u>INSPECTION OF SLAUGHTER-HOUSES, &c.</u>		1901.	1902.
Number of Visits to Slaughter-houses made by Meat Inspectors		9,566	9,260
Number of Visits to Butchers' Shops made by Meat Inspectors		67,393	65,176
Number of Visits to Fish and Fruit Shops made by Fish Inspectors		54,542	59,410
Number of Visits to Fruit Shops made by Fruit Inspectors		15,763	16,013
Number of Visits to Poultry Depôts made by Fish Inspectors		365	201

FISH PLATFORMS.

						<u>1901.</u>	<u>1902.</u>
Number of Visits	.	...	...	...	...	130	107

RETURNS OF ANIMALS KILLED IN THE CITY SLAUGHTER-HOUSES,
AND OF MEAT IMPORTED FOR SALE.

The increase in cattle slaughtered in the City in 1902, as against 1901, is probably due to the high prices maintained for States cattle, and also to the temporary prohibition of the importation of Argentine cattle.

There is a large increase in not only the number of sheep slaughtered, but also in the number imported, as compared with the year 1901.

With regard to pigs, it will be noticed that there is an increase in the number killed in the City coincidentally with a decrease in the number imported.

STREET.	Beasts.	Sheep.	Lambs.	Calves.	Pigs.	Dead Meat Imported for Sale.			
						Beasts.	Sheep.	Pigs.	Calves.
Abattoir.	6815	199531	—	14827	37734	44543	398296	37165	1245
Back Butler Street	227	978	24	48	...	...	...	...	...
Back Castle Street	183	3	...	101	...	3	...	...	...
Back Mount Vernon Green...	382	3208	...	5	...	...	...	...	...
Bevington Hill	970	64	...	547	1	13	...	...	...
Cotter Street	201	7	...	52	1	...	...	...	...
Corlett Street	65	1724	442	...	...	...	...	...	...
Crown Street	247	843	295	...	...	...	...	...	...
Darnley Street ... ..	...	...	...	...	1324	...	...	...	...
Edgeware Street ... ..	...	...	...	...	...	...	...	...	...
Foley Street ... ..	...	...	...	...	9460	1	...	...	...
Peel Street	34	885	208	...	33	...	...	...	...
Carried forward	2309	7712	969	753	10819	17	...	...	...

**RETURNS OF ANIMALS KILLED IN THE CITY SLAUGHTER HOUSES
AND OF MEAT IMPORTED FOR SALE—Continued.**

STREET.	Beasts.	Sheep.	Lambs.	Calves.	Pigs.	Dead Meat Imported for Sale.			
						Beasts.	Sheep.	Pigs.	Calves.
Brought forward ...	2309	7712	969	753	10819	17	...	...	...
Allerton Road, Wavertree ...	580	5385	...	77	131	...	...	...	...
Byrom Street ...	...	...	...	...	10	...	...	...	...
Bolton Street ...	4	511	128	...	...	...	...	...	...
Back Commutation Row	224	1442	193	...	...	...	...	...	...
Copperas Hill .....	...	...	...	...	7840	...	...	...	...
Derby Lane, Old Swan .....	...	841	90	...	...	...	...	...	...
Finch Place .....	...	28	9	2	...	...	...	...	...
Frederick Street	8	2	20	1	2	...	...	...	...
101, High Street, Wavertree..	3	6	...	...	...	...	...	...	...
105, High Street, Wavertree.	34	181	28	4	11	...	...	...	...
St. Mary's Road, Garston ...	7	...	...	...	...	...	...	...	...
Upper Milk Street .....	...	...	...	...	6064	...	...	...	...
Norfolk Street	2	...	...	...	...	...	...	...	...
Norman Street .....	...	...	...	...	1589	...	...	...	...
Prescot Road, Knotty Ash ...	15	605	178	25	39	...	...	...	...
Sandown Lane, Wavertree ...	14	560	88	1	10	...	...	...	...
Sidwell Street, Garston	25	13	...	...	24	...	...	...	...
Soho Street .....	...	...	...	...	1060	...	...	...	...
West Derby Road, Tue Brook	322	2088	206	10	71	...	...	...	...
Total in Private Slaughter-houses	3547	19374	1909	873	27670	17	...	...	...
Total in the City	10362	218905	1909	15700	65404	44560	398296	37165	1245

PRECEDING YEAR.

Total in Private Slaughter-houses	3144	18708	2561	1095	28287	7	...	...	...
Total in the City	7495	190919	2561	15373	63208	50017	374317	40852	1647

UNWHOLESOME MEAT, FISH, &c., SEIZED AND DESTROYED.

DATE.—1902.		Beef.	Veal.	Mutton.	Pork.	Poultry.	Rabbits and Hares.	Fish.	Shell fish	Oysters.	Miscellaneous.
		Lbs.	Lbs.	Lbs.	Lbs.	Head		Lbs.	Bags		
MARKETS.	St. John's	3257	67	128	249	1095	290	77912	21	4000	48 lbs. Fruit
	St. Martin's	888	36	116	...	...	...	...	...	...	224 „, Horse Flesh
SLAUGHTER-HOUSES.	Abattoir	144902	13033	16906	30683	...	...	...	...	...	...
	Back Castle Street ...	13139	669	48	...	...	...	...	...	...	...
	Bevington Hill	22993	2665	202	150	...	...	...	...	...	...
	Copperas Hill .....	...	...	...	2504	...	...	...	...	...	...
	Norman Street .....	...	...	...	254	...	...	...	...	...	...
	Soho Street	80	...	60	376	...	...	...	...	...	...
	Bronte Street	3059	...	...	...	...	...	...	...	...	...
	Edge Hill Station.....	142	12	...	10	...	...	14	...	3000	3869 lbs. of Fruit, etc.
	Foley Street .....	...	...	...	172	...	...	...	...	...	...
	Great Charlotte Street	...	...	...	...	1	...	800	...	...	84 lbs. of Fruit, etc.
	London Road.....	14	...	...	...	...	...	...	...	...	...
	Lime Street Station...	...	...	...	...	...	...	...	...	...	140 lbs. Fruit, etc
	North Haymarket ...	...	...	...	...	...	...	...	...	...	86419 lbs. Fruit
	Queen's Square .....	...	...	...	...	...	...	...	...	...	3768 lbs. Fruit, etc
	Roe Street .....	...	...	...	...	...	...	...	...	...	280 lbs. Water-cress
	Rose Street .....	...	...	...	...	171	521	38282	3	...	...
	Russell Street	278	...	...	...	...	...	...	...	...	...
	Scotland Road	112	...	80	...	...	...	...	...	...	...
Carried forward...		188864	16482	17540	34398	1267	811	117008	24	7000	

UNWHOLESOME MEAT, FISH, &c., SEIZED AND DESTROYED.—*Continued.*

DATE.—1902.	Beef.	Veal.	Mutton.	Pork.	Poultry.	Rabbits and Hares.	Fish.	Shell-Fish.	Oysters.	Miscellaneous.
	Lbs.	Lbs.	Lbs.	Lbs.	Head		Lbs.	Bags		
Brought forward...	188864	16482	17540	34398	1267	811	117008	24	7000	
Allerton Road	12	...	...	...	...	...	...	...	...	...
Athol Street .....	...	...	17	...	...	...	...	...	...	...
Back Butler Street ...	1124	64	12	25	...	...	...	...	...	...
Back Mount Vernon Green .....	...	...	42	...	...	...	...	...	...	...
Brunswick Station.....	...	...	...	896	...	...	...	...	...	...
Canada Dock Station..	800	...	...	...	...	...	...	...	...	...
Central Station.....	...	...	...	...	...	...	...	...	...	392 lbs. of Yeast
Cotter Street	1477	110	...	...	...	...	...	...	...	...
Dale Street .....	...	...	...	...	...	...	...	2bgs	...	...
Duke's Dock .....	...	...	63	...	...	...	...	...	...	2128 lbs. of Cheese
Elliot Street	2172	...	40	...	...	...	...	...	...	...
Gt. Howard Street.....	...	...	...	...	...	...	...	...	...	72 lbs. Condensed Milk
Gt. Nelson Street.....	...	...	...	...	...	...	...	...	...	8000 lbs. Potatoes
Gill Street	26	...	...	...	...	...	...	...	...	...
Heyworth Street	1016	...	...	...	...	...	...	...	...	...
Houghton Street .....	...	...	...	...	...	...	...	...	1000	...
Jackson Street .....	...	75	...	...	...	...	...	...	...	...
Lawrence Road.....	...	...	...	16	...	...	...	...	...	...
Limekiln Lane.....	...	...	10	...	...	...	...	...	...	...
Manesty Lane .....	...	...	...	...	...	...	3574	...	...	...
Mere Lane .....	...	...	...	110	...	...	...	...	...	...
Mill Street.....	116	...	...	10	...	...	...	...	...	...
Carried forward...	195601	16731	17724	35455	1267	811	120582	26	8000	

UNWHOLESOME MEAT, FISH, &c., SEIZED AND DESTROYED.—*Continued.*

DATE.—1902.	Beef.	Veal.	Mutton.	Pork.	Poultry.	Rabbits and Hares.	Fish.	Shell-Fish.	Oysters.	Miscellaneous.
	Lbs.	Lbs.	Lbs.	Lbs.	Head		Lbs.	Bags.		
Brought forward...	195601	16731	17724	35455	1267	811	120582	26	8000	
Naylor Street .....	...	...	...	...	12	...	...	...	...	...
North Docks Station..	...	...	...	112	...	...	...	...	...	...
Prince's Dock.....	...	...	...	140	...	...	...	...	...	...
Regent Road .....	...	...	...	...	...	...	...	...	...	42588 lbs. of Fruit
St. James Street	132	...	42	96	...	...	...	...	...	...
Stanley Street .....	...	...	...	...	...	...	1080	...	...	...
Sidwell St., Garston...	...	...	24	...	...	...	...	...	...	...
Soho Street	80	...	60	376	...	...	...	...	...	...
Temple Court .....	...	...	...	...	...	...	...	...	...	1120 lbs. of Fruit
Upper Milk Street.....	...	...	...	495	...	...	...	...	...	...
Walton Road.....	...	...	50	...	...	...	...	...	...	...
Warbreck Moor.....	...	...	...	106	...	...	...	...	...	...
Waterloo Dock .....	...	...	...	110	...	...	...	...	...	...
West Derby Road.....	645	...	...	...	...	...	...	...	...	...
Williamson Square ...	...	...	...	...	332	74	...	...	...	...
Total	196464	16731	17900	36890	1611	885	121662	26	8000	

The total amount of Meat and Fish found to be unfit for human food is equivalent to—

			Tons.	Cwts.	Qrs.	Lbs.
Meat	...	...	119	12	2	25
Fish	...	...	54	6	1	2

and this does not include Fish removed as refuse by Officers of the Cleansing and Scavenging Department under the City Engineer.

The great bulk of this meat was not exposed for sale, and did not require a Justices' order for its destruction.

The quantity of fish seized includes both fresh fish and salt fish which had become tainted during transit or storage, a regrettable waste of food.

ANIMALS SMOTHERED AND INJURED IN TRANSIT ON BOARD SHIP.

Beasts.	Sheep.	Pigs.	Number found good.	Number found bad.	Weight of bad in pounds.
28	81	186	225	70	17,849

The Animals (Transit and General) Order compels the master of the vessel to slaughter all seriously-injured animals forthwith. Such animals are slaughtered on board the vessel, and the carcasses removed to the abattoirs.

Police proceedings in respect to meat and fish and fruit were as follows :—

	1901.	1902.
Number of informations in respect to Diseased Meat	9	5
„ „ „ „ Fish, &c.	5	2
„ „ „ „ Fruit	12	2
„ Fined	26	9
„ Sent to Gaol	—	—
Amount of Fines and Costs	£171 0 0	£81 10 0

	1901.	1902.
Number of carcasses seized during the year by Medical Officer of Health and Inspectors under section 116 of the Public Health Act, 1875 ...	917	935
	289 Cattle 176 Calves 253 Sheep 189 Pigs. 10 Goats	252 Cattle 254 Calves 220 Sheep 171 Pigs 38 Goats

* Number of such carcasses condemned by Justices under section 117 of the Public Health Act, 1875

5

4

Number of carcasses so seized in consequence of the animal having suffered from Tuberculosis

136

136

Amount of Fines and Costs ...£90 8 6 — £71 11 0

*The remainder were dealt with under a Local Act, which does not require a Justices' Order.

GLANDERS AND FARCY.

The Diseases of Animals Acts and the Order and Regulations made thereunder have been referred by the Health Committee to the Medical Officer of Health to carry out, in conjunction with the Veterinary Inspector and Sanitary Staff.

Prior to the passing of the Diseases of Animals Act, and the Glanders and Farcy Order of 1894, the record of the number of cases of glanders occurring in the city is wholly unreliable. The number of cases reported during each of the three years preceding the Order is as follows:—

1893	...	2 cases.
1894	...	3 „
1895	...	1 case.

Early in 1896, under the principal Act, and the Glanders and Farcy Order, the Health Committee made regulations which were circulated amongst horsekeepers, together with a notice indicating general precautions against glanders.

The number of cases of glanders which were brought to light during each of the seven years, 1896 to 1902, is as follows:—

CASES.						
1896	...	40	...	5	brought into the city from outside.	
1897	...	18	...	2	„	„
1898	...	9	...	1	„	„
1899	...	20	...	4	„	„
1900	...	5	...	1	„	„
1901	...	5	..	—		
1902	...	9	...	3	„	„

In giving effect to the Act the following procedure is usually adopted:—

Information of actual or suspected disease is usually received, under the terms of the Order

- (A) from the owner;
- (B) from the Police;
- (C) from the proprietor of the registered knacker's yard.
(There is only one in the city.)

Immediately upon receipt of such information, or as speedily thereafter as possible, the Veterinary Inspector examines the animal, and if he finds it to be infected with glanders he certifies accordingly. The horse is slaughtered on the premises where it is found, and the carcase, head-stall, clothing, &c., removed in the knacker's cart in charge of an inspector appointed under the Act, a member of the staff of the Medical Officer of Health, to the knacker's yard, Carruthers Street, where a post-mortem examination is made.

The inspector attends to see that the carcase is destroyed. Carbolic acid is poured over the carcase, which is subsequently placed in a digester, with a certain amount of carbolic acid, and destroyed by boiling. The knacker's cart is thoroughly washed and cleansed in the inspector's presence.

In the meantime, another inspector, also similarly appointed, visits the premises, immediately notice is received of the existence of glanders in any place in the city, for the purpose of supervising the disinfection and cleansing of the stables and manure. All fodder and litter that have been in contact with the diseased animal, or in the stall adjoining, are removed and placed in the middenstead, and a quantity of quicklime is thrown over the manure, after which a quantity of carbolic acid and water is thrown over the lime.

A certificate is then signed in accordance with Article 12 of the Glanders Order, for the removal of the manure. The parts of the stable from which the horse has been removed are washed with hot water, and disinfected by hot limewashing, with limewash mixed with carbolic acid. The Veterinary Inspector, after this has been done, gives a certificate certifying that the stable has been thoroughly cleansed and disinfected in accordance with the requirements of Article 10, Regulation C. The remaining animals on the premises from which the diseased animal has been removed are inspected weekly for some time, until it is certain that the disease has disappeared.

Powers are wanted in regard to the detention and supervision of animals which have been in contact with diseased animals, and it is most desirable that the owners of animals which have been so exposed should be prohibited from parting with them or selling them, excepting under such conditions as would enable them to be traced and kept under observation.

It is most necessary that the notification of glanders by Veterinary Surgeons should be **made compulsory**.

As regards the diagnosis of glanders, a most efficient and reliable test has been discovered. This test is known under the name of Mallein, and is in reality a very weak culture in a liquid form of the glanders bacillus. A most satisfactory way of dealing with studs that have contained this disease would be to apply the Mallein test to all the animals, and by this method a ready means of detecting latent cases is found, and thus prevent the disease spreading from animal to animal in the same stud, and also from one stud to another.

The Board of Agriculture, on account of the prevalence of glanders throughout the country, and also to insure that horses imported from the North American Continent were free from the disease, requested the Local Authority in 1896 to cause these imported horses to be subjected to veterinary examination. This inspection has been continued since.

During the year 1902, 1,836 horses were examined, principally at the Canadian Horse Repository, Stanley, but also at various other depôts throughout the City and elsewhere, and their condition was very satisfactory.

In addition to the above-mentioned, 6,300 horses (some of which were landed beyond the city boundaries) have been examined and re-examined at the various sale yards, with a view to the maintenance of the general health of the animals in the city.

The imported animals were on the whole in a very good condition, and the mortality small; no evidence of contagious disease was found.

The number of cases of glanders detected in 1902 was nine, showing that the disease is not yet entirely exterminated. Although there is an increase over the previous year, the number is very small considering the number of animals there are in the City, and compared with London the disease is very low indeed.

Glanders and farcy have been found to exist on three premises. Numerous reports of suspected cases were received, and 229 animals were examined. Of this number 3 were condemned and destroyed as being affected with glanders and farcy.

Animals Examined.	Affected.	Suspicious.	Not Affected.
229	9	—	220

Total Number of Animals in Stables, &c., where the Disease occurred.	SLAUGHTERED.		Died.
	By Order of Owner.	By Order of Local Authority.	
52	...	3	*6

* The carcasses of these animals were found at the Knacker's Yard Holme Street and Carruthers Street.

LUNGS OF HORSES EXAMINED AT KNACKER'S YARD, HOLME STREET, SANDHILLS.

During the year 1902 the Veterinary Superintendent has caused the lungs of all horses sent to the above premises to be examined. In every instance where there was evidence of the disease manifested in the lungs, the owners of the animals were notified, and if within the city boundaries, the remainder of their studs were subjected to veterinary examination. In cases where the existence of Glanders or Farcy is capable of detection during the life of the animal, proceedings are taken against the responsible persons.

If the carcass of the animal was brought from outside the City Boundaries, and the disease was thought to have been discernible during the life of the animal, notice is given to the necessary Local Authority, and the persons dealt with as the Act directs.

A case of anthrax was also detected.

Lungs Examined.	Glandered.	Not Affected.
1,711	...	1,711

ANTHRAX.

There were thirteen cases of Anthrax reported during the year. In 7 of the cases the carcasses were found at the Abattoir, 3 at Bevington Hill Slaughterhouse, 1 at the Knacker's Yard, Holme Street, and 2 were notified by the owners to the Inspector, and removed under his supervision to the Knacker's Yard for destruction.

A portion of the spleen was in each case submitted to Professor Boyce, University College, who certified that the animals from which they were taken were affected with anthrax. The usual disinfection was carried out in each case.

Date. 1902.	Total number of Animals on premises where disease occurred.	Died.	Locality.	Remarks.
Jan. 23rd...	13	1	Burlington Street	A second cow died on 15th March.
,, 28th...	1	1	County Road, Walton.....	
Feb. 25th...	17	1	Woodlands Road	
,, 27th...	15	1	High Park Street.....	
April 18th...	20	1	Eaton Road, Knotty Ash	
,, 25th...	23	1	Park Road.....	
June 4th...	16	1	Torr Street	
,, 6th...	9	1	Albion Street	
,, 12th...	17	1	Holland Street.....	
July 25th...	14	1	Doncaster Street	
Nov. 11th...	14	1	Rathbone Road	A second cow died 9th August.

PLEURO-PNEUMONIA.

There was no case reported during the year.

SWINE FEVER.

The following table shows the number of animals affected with swine fever and the number in the herds slaughtered under the Swine Fever Order.

Total Number in Herds.	HEALTHY.		DISEASED.		Died.	Locality.	Remarks.
	Slaughtered.		Slaughtered.				
	By Order of Owner.	By Order of Board of Agriculture.	By Order of Owner.	By Order of Board of Agriculture.			
17	...	...	...	1	...	Walton Village	16 remaining healthy when ultimately declared free.
2	1	...	...	...	1	Prescot Road, Knotty Ash..	
3	1	...	1	...	1	West Derby Village	

RABIES.

In conformity with the requirements of the Board of Agriculture, reports were sent to the Board in respect to 10 suspected cases of rabies. Bacteriological examination was made in all the cases, and *post mortem* examinations were made by the Veterinary Inspectors. There were no signs that any of the animals had been affected with rabies.

SHEEP SCAB.

No trace of this disease has been discovered during the year by the Veterinary Inspector at Stanley Cattle Market, or at any place within the City boundaries.

PIGGERIES.

						<u>1901.</u>	<u>1902.</u>
Number of applications to keep pigs	...	...	...	...	...	22	18
„ „ granted	...	...	...	...	...	21	9
„ „ refused	...	...	...	...	...	1	2
„ „ in abeyance	...	...	...	...	...	Nil.	7
„ Pigs applied for	...	...	...	...	...	495	325
„ „ granted	...	...	...	...	...	309	156
Total number of licensed piggeries...	...	...	...	...	...	54	62
„ pigs	...	...	...	...	...	757	905
Number of visits to piggeries	...	...	...	...	...	225	372
„ Informations	...	...	...	...	...	2	1
„ Fined	...	...	...	...	...	2	1
Amount of Fines and Costs	...	...	...	...	...	£10 9 0	£1 4 6

DAIRIES, COWSHEDS AND MILKSHOPS.

There is no change in the method of procedure respecting the licensing of cowsheds and the registration of dairies, milkshops and milkstores.

STATISTICS RESPECTING COWSHEDS.

	<u>1902.</u>
Number of applications to keep cows on premises not previously licensed	16
„ „ granted	4
„ cows applied for on above applications	248
„ granted	73
„ in abeyance, pending alterations	12
One application standing over from last year now granted.	
Number of applications for transfer to fresh tenants of cowsheds previously licensed	52
„ „ now granted	50
„ „ in abeyance	2
„ „ to keep more cows than the number for which the license was originally granted	4
„ „ granted	4
„ additional cows applied for	7
„ „ granted	7
„ Cowsheds existing within the City during 1901 ...	443
„ „ now existing	442
Number of cows licensed to be kept within the city area	6,068

COWSHED INSPECTION.

					<u>1901.</u>	<u>1902.</u>
Number of Inspections of Cowsheds	...	...			4,389	4,183
,, found Incorrect	.	...	...	..	110	123
,, of Informations	...	...	...	...	10	3
,, Fined	...	...	...	..	8	3
Amount of Fines and Costs	...	...			£21 7 0	£4 13 6

Thirty-two notices have been issued to occupiers directing their attention to contraventions of the regulations.

Number of cowsheds in the city during the years 1893 to 1902 inclusive, together with the number of cows licensed to be kept, and the number of applications for new cowsheds, is as follows:—

		Cowsheds.		Cows.		Applications.
1893	...	344	...	4,634	...	4
1894	...	304	...	4,005	...	2
1895	...	325	...	4,311	...	20
1896	...	404	...	5,393	...	129
1897	...	453	...	5,650	...	33
1898	...	435	...	5,695	...	13
1899	...	434	...	5,851	..	2
1900	...	437	...	5,905	...	5
1901	...	443	...	5,909	...	6
1902	...	442	...	6,068	...	16

MILKSHOPS.

Number of Applications for registration	...	...	...	...	134
of which transfers were	..	...	...	..	86
,, above Applications granted	...	...	...	...	112
,, ,, ,, in abeyance	...	...	...	...	18
,, ,, ,, refused	..	...	...	...	1

One application standing over from 1901 has been granted.

Number of Milkshops on the register at the end of 1898	...	...	892
,, ,, ,, ,, 1899	...	...	830
,, ,, ,, ,, 1900	...	...	869
,, ,, ,, ,, 1901	...	...	898
,, ,, ,, ,, 1902	...	...	802

DAIRIES AND MILKSHOPS INSPECTION.

	<u>1901.</u>	<u>1902.</u>
Number of Inspections of Dairies and Milkshops	6,207	6,386
,, found incorrect	190	116
,, of Informations	7	8
,, Fined	7	8
Amount of Fines and Costs	£16 16 0	£12 8 6

Forty-three caution notices have been issued to occupiers of milkshops for contravention of the Regulations.

LEAVELOOKERS' VISITS TO SHIPPONS FOR THE PURPOSE OF

EXAMINING COWS.

No. of Visits.	No. of Examinations of Cows.	No. found Healthy.	No. found ill and referred to the Veterinary Inspector.
1,951	22,741	22,723	18

ICE CREAM MAKERS AND VENDORS.

The usual inspections have been made of the premises utilised by the street traders solely for manufacturing ice cream.

The dwellings which these street traders occupy have also been kept under observation, and in no instance during the past year have they been found to make or store ice cream in or about the said dwellings.

A systematic inspection has also been made of shopkeepers' premises which are used for the manufacture and sale of ice cream.

					<u>1901.</u>	<u>1902.</u>
Number of premises under Inspection	...	...	...	...	435	477
„ visits made	...	...	...	...	2,310	2,616
„ caution notices issued	...	...	...	...	23	29
„ Informations	...	...	...	...	5	1
„ Fined	...	...	...	...	5	1
						<hr/>
Amount of Fines and Costs	...	...	...	...	£8 12 6	| £2 4 6

MILK SUPPLY AND TUBERCULOSIS.

The routine examination of cows in City Cowsheds is carried out by the Meat Inspectors, who report all cases of sickness amongst the cows.

Under the Liverpool Corporation Act, 1900, the Medical Officer of Health has requested the Veterinary Superintendent to visit and specially examine various animals suspected of being affected with Tuberculosis of the udder both in town and country shippens supplying the city with milk. The examinations made within the city boundary involved special visits to 12 shippens and a careful examination of 13 animals. Where an animal is suspected of being affected with Tuberculosis of the udder, she is either at once sent out for slaughter, or is isolated pending the application of the Tuberculin test, and her milk is thrown away. Animals re-acting to the test and having lesions of the udder are, with the consent of the owner, slaughtered. Thirteen animals were dealt with in this way. Seven animals were slaughtered, three being condemned. The Tuberculin test was applied to 5 animals, 2 re-acting and 3 failed to re-act. The carcasses of the remainder were suitable for food. In each case the shippens were found to be in very good condition, and the cattle well groomed and well fed.

MILK SUPPLIED FROM OUTSIDE THE CITY BOUNDARIES.

Under the Liverpool Corporation Act, 1900, the Inspectors visit the various railway stations and take samples of milk forwarded from cows outside the City boundary. (See page 170.) The samples are submitted to bacteriological analysis, and if found contaminated with Tuberculosis, the Veterinary Superintendent, accompanied by a representative of the Medical Officer of Health, visits the cowsheds and examines the whole of the cattle contained therein, after obtaining the necessary authority as prescribed by the Act.

The majority of the cowsheds visited are situated in the county of Cheshire; there are also some in Wales, Shropshire and other counties. The cowsheds, taken as a whole, are not in a satisfactory condition, and fall very far short (from a sanitary point of view) of those within the

City. The animals are not up to the standard of City cattle, nor are they kept as well groomed. The proceedings adopted with suspected or affected animals are much the same as with those within the City. Samples of milk are taken from suspected animals, and forwarded to the Medical Officer of Health. Pending the result of the bacteriological examination, the animal is isolated, and the milk from the particular cow or cows is not allowed to be sent into the City. In many cases of suspected animals, definite information was lacking, owing to the animals being slaughtered by their owner.

Twenty-two farms, comprising 66 cowsheds, were visited, and 760 cattle examined, 16 being obviously suffering from tuberculosis and 18 presenting suspicious features. Twenty-four cows were isolated, and were ultimately disposed of by their owners.

The cowsheds visited extend over a large area, and are mostly situated in counties adjacent to Liverpool, Cheshire containing the majority; but frequent visits have also been necessary to North Wales, Shropshire and Staffordshire.

The herds are, as a rule, much larger than those existing within the City, and consequently a considerable amount of time and trouble is taken in making the examinations.

The shippens are also far from being in the satisfactory condition of those to be found in Liverpool; want of sanitary conditions both inside and outside the buildings being inimical to the health of the animals. The animals themselves also lack the well-groomed and well-fed appearance that ought to exist.

When an animal suffering (or suspected to be suffering) from Tuberculosis of the udder is found in a herd, the owner is requested to isolate the animal, and not to send any more of her milk to Liverpool. He is liable to be summoned before the Liverpool Health Authorities to show cause why he should not be prohibited from sending milk to the City, and he is also liable to prosecution for not reporting the case. Samples of milk are taken from affected and suspected animals, and submitted to bacteriological examination. In many cases the difficulty of finding the animal from which the infected milk was derived is increased owing to the fact of some of the animals having been sold after analysis of the bulk of the milk was made.

There can be no doubt that the operations of the Liverpool Corporation Act, 1900, is tending to improve the condition of cowsheds in various parts of the country from which milk is sent into Liverpool; the applications of the Act, however, in country districts are defective and expensive, and involve a considerable amount of the time of Liverpool officials. So far as Liverpool itself is concerned, the milk clauses of the Act unquestionably result in giving a measure of protection to the City, but there is nothing whatever to prevent a milk dealer who is prohibited from sending diseased milk to Liverpool sending it to another part of the country which is less adequately protected.

There are grounds for thinking that Sanitary Authorities in country districts do, owing to the action of the Liverpool Corporation, realise the necessity for putting into operation available powers to insure the sanitation of country cowsheds, and there is no reason to doubt that cowkeepers themselves, when the matter has been pointed out to them by officers of the Corporation, realise that advantages will accrue from keeping the cowsheds in a sanitary condition, and from keeping the animals clean.

It is most discreditable to country Sanitary Authorities and cowkeepers, that cities, in self defence, should be obliged to apply to Parliament for special powers to prevent dealers from sending milk of diseased cows into the City, when the obligation of removing the causes of disease rests with the country Sanitary Authority, and the remedy admits of an easy application.

STERILIZED MILK DEPÔTS.

Further attention has been given during the year to the question of the provision of humanised sterilized milk for the use of infants whose mothers are from one cause or another unable to suckle them.

The excessive mortality amongst infants in certain districts of the City, notably during the third quarter of the year, associated with improper feeding, more especially with decomposing food-stuffs, induced the Health Committee to make provision to enable mothers to substitute pure and suitable food for the foul and decomposing contents of ordinary feeding bottles.

During the third quarter of the year the Depôts were taxed to their utmost capacity, and during the hot weather a maximum of nearly 3,000 bottles per day of the milk specially prepared for infants was sold.

About thirty dairy keepers have obtained permission to sell the milk prepared at the Corporation Depôts.

Many other places besides Liverpool are taking up the question of providing humanised sterilised milk, and the experiments undertaken in this City have proved successful enough to encourage others.

The following are the regulations which control the sale of the milk, and cards giving the necessary information have been circulated in suitable localities—

1. The milk will be supplied in 9 bottles in a basket, each bottle containing sufficient milk for one feed according to the age of the child.
2. When all the milk in one bottle is not used, the remainder must not be warmed up again for the infant, but a fresh bottle opened for its next meal. This milk will be found to be quite sufficient if given regularly.
3. The person using the milk must guarantee to continue its use regularly during the needs of the child, and to send for it at the stated hours.
4. Should the milk not be agreeing with the child, the matter should be reported at once.
5. Every person using the milk will be supplied with two teats, which must be kept clean and brought to the Depôt for inspection, at least once a week. Extra teats will be charged for at the rate of 3d. each.
6. Just before using, each bottle should be placed unopened in a basin or jug of hot water, and warmed to the proper temperature. The bottle should then be opened and the teat inserted. It is recommended that, at first, the infant should be fed every two hours during the day, and every four hours during the night.

7. After using, the bottle should be thoroughly rinsed in cold water.

8. If children are sent for the milk, they must be warned not to tamper with the stoppers of the bottles.

9. All bottles, stoppers, baskets, and rubber rings not returned to the Dépôt, will be charged full value.

10. The cost of the full weekly supply of Humanised Milk for Infants is 1s. 6d., payable in advance.

NOTE.—The Dépôts are open daily (Sundays and Bank Holidays excepted) from 11 a.m. till 6 p.m. Sundays and Bank Holidays 11 a.m. till 1 p.m.

Dépôts for the Sale of Milk for use for Infants are situated at—

251, Netherfield Road North.

47, Cazneau Street.

52, Earle Road.

37B, Park Road.

As regards details, it may be stated that a mixture is prepared consisting of cows' milk, water, cream, salt and sugar, in such quantities as to make the liquid practically the same as human milk; a sufficient amount for one feed for an infant of stated age is put into each bottle, and the bottle and contents are then sterilized. Nine such bottles, each containing one feed, are given out for use during the succeeding 24 hours. The bottle, after a single use, is thoroughly cleansed before being refilled and sterilized. The method of use is carefully explained verbally to the person having charge of the infant, and from time to time visits are paid to see that the milk is being used intelligently and in a proper manner. Owing to a common prejudice amongst the more ignorant classes, it is difficult to induce the mothers to bring the infant to the Dépôt from time to time to be weighed.

PROCEEDINGS UNDER THE FOOD AND DRUGS
AND MARGARINE ACTS.

All samples of food or drugs are taken either by, or under the superintendence of Inspectors of the Health Department. It is of the greatest consequence that trained and practised persons should be employed for this purpose. It is necessary from time to time to employ women or young lads as agents, to go into the shop to ask for the articles, and as soon as the agent receives them, the Inspector enters the shop and completes the formalities which the Act requires. The following is a list of the

SAMPLES TAKEN FOR CHEMICAL ANALYSIS.

No of Samples purchased.	Description of Samples.	Adulterated.	Informations.
9	Arrowroot ... ..	...	...
8	Almonds, Ground	2	1
10	Baking Powder ... ..	...	...
1	Beef Suet ... ..	...	...
97	Beer	1	...
24	Bitter Beer ... ..	...	...
2	Black Currant Wine	1	...
2	Boiled Rabbit ... ..	...	...
12	Bread ... ..	...	...
9	Bread and Butter	3	3
109	Butter... ..	14	5
1	,, Milk	1	...
1	Bunloaf ... ..	...	...
1	Camphorated Oil ... ..	...	...
1	Capers... ..	...	...
2	Carbonate of Soda ... ..	...	...

SAMPLES TAKEN FOR CHEMICAL ANALYSIS—CONTINUED.

No. of Samples purchased.	Description of Samples.					Adulterated.	Informations.
1	Carraway Seeds	...	...	...	...	...	...
1	Cassia ...	...	...	...	...	...	...
1	Champagne ...	...	...	...	...	...	...
1	Cherry and Cider	...	...	...	...	...	...
24	Cheese...	...	...	...	...	...	...
3	Citrate of Magnesia...	...	...	...	...	...	...
1	Claret ...	...	...	...	...	...	...
1	Cloves...	...	...	...	...	...	...
12	Cocoa ...	...	...	...	...	...	...
1	Cocoa and Milk	...	...	...	...	...	...
2	Cod Liver Oil	...	...	...	...	...	...
21	Coffee ...	...	...	...	...	...	...
1	Coffee and Chicory	...	...	...	...	...	...
1	Corned Beef	...	...	...	...	...	...
4	Cornflour	...	...	...	...	...	...
14	Cream ...	...	...	...	...	5	1
2	„ Cheese...	...	...	...	...	...	...
12	Cream of Tartar	...	...	...	...	...	...
2	Cream of Wheat	...	...	...	...	...	...
2	Custard Powder	...	...	...	...	...	...
1	Elderberry Squash	...	...	...	...	1	...
6	Flour ...	...	...	...	...	...	...
6	Flour, Self-raising	...	...	...	...	...	...
3	Gin ...	...	...	...	...	...	...
1	Ginger Beer	...	...	...	...	...	...
1	„ Beer Powder...	...	...	...	...	...	...
27	„ (Ground and Whole)	...	...	...	...	1	...
1	„ Brandy	...	...	...	...	...	...

SAMPLES TAKEN FOR CHEMICAL ANALYSIS—CONTINUED.

No. of Samples purchased.	Description of Samples.	Adulterated.	Informations.
7	Ginger Wine	4	...
3	Glycerine ... ..	...	...
3	Grape Nuts ... ..	...	...
1	Greek Wine ... ..	...	...
1	Herrings and Tomatoes ... ..	...	...
4	Honey... ..	...	...
1	Ice Cream Powder ... ..	...	...
1	Infants' Food ... ..	...	...
1	Ipecacuanha Wine ... ..	...	...
27	Jams	7	1
10	Jellies ... ..	...	...
22	Lard	5	2
1	Lemonade ... ..	...	...
1	„ Powder ... ..	...	...
7	Lemon Squash	7	...
5	Lime Juice Cordial	3	...
1	Lime Juice	2	...
1	Little Wilts Cheese ... ..	...	...
1	Lobster ... ..	...	...
1	Lucca Oil ... ..	...	...
5	Mace, Ground	1	1
21	Margarine	2	...
2	„ Cheese ... ..	...	...
3	Marmalade ... ..	...	...
3	Medicine Prescriptions ... ..	...	...
11	Mercury Ointment	4	2
867	Milk (new)	97	76
54	„ (skimmed) ... ..	...	...

SAMPLES TAKEN FOR CHEMICAL ANALYSIS—CONTINUED.

No of Samples purchased.	Description of Samples.	Adulterated.	Informations.
6	Milk (Machine Skimmed) ... ..	...	...
19	„ (condensed) ... ..	...	...
10	Mixed Spice ... ..	...	...
1	Moseley's Food ... ..	...	...
2	Mother Oats ... ..	...	...
2	Mustard ... ..	...	...
1	Oatmeal ... ..	...	..
7	Olive Oil ... ..	...	..
1	Orange Wine... ..	...	..
2	Peas, Marrowfat ... ..	...	...
2	Pepper, cayenne ... ..	...	..
1	„ black	1	1
37	„ white	8	5
4	Piccalilli ... ..	...	...
4	Pickles ... ..	...	...
4	Porter ... ..	...	...
3	Port Wine ... ..	...	..
1	Potted Bloaters ... ..	...	...
5	Preserved Apricots ... ..	...	...
1	„ Black Currants ... ..	...	...
1	„ Bilberries ... ..	...	...
1	„ Figs ... ..	...	...
1	„ Gooseberries ... ..	...	...
1	„ Mixed Fruit ... ..	...	...
2	„ Pears ... ..	...	...
9	„ Peas	5	1
5	„ Pineapple ... ..	...	...
2	„ Plums ... ..	...	...

SAMPLES TAKEN FOR CHEMICAL ANALYSIS—CONTINUED.

No. of Samples purchased.	Description of Samples.					Adulterated,	Informations.
1	Preserved Raspberries	...	...	...	...	...	...
3	„ Tomatoes	...	...	...	...	...	...
2	Raspberry Wine	...	...	...	...	1	...
5	Rice, ground	...	...	...	...	1	1
1	Roast Chicken	...	...	...	...	...	...
1	Roast Mutton	...	...	...	...	...	...
1	Roast Beef	...	...	...	...	...	...
5	Rum	...	...	...	...	...	...
1	Sago	...	...	...	...	...	...
1	Salmon	...	...	...	...	...	...
1	Sardines	...	...	...	...	...	...
2	Sauce	...	...	...	...	...	...
1	Seed Cake	...	...	...	...	...	...
1	Seidlitz Powder	...	...	...	...	...	...
1	Sherry...	...	...	...	...	...	...
3	Shrimps, Potted	...	...	...	...	1	1
1	„ Picked	...	...	...	...	...	...
1	Soda Water	...	...	...	...	...	...
6	Stout	...	...	...	...	...	...
5	Sugar	...	...	...	...	...	...
4	Sweet Cake	...	...	...	...	...	...
33	Sweetmeats	...	...	...	...	1	1
9	Syrup, golden	...	...	...	...	...	...
3	Tartaric Acid	...	...	...	...	...	...
25	Tea	...	...	...	...	...	...
2	Treacle	...	...	...	...	...	...
6	Vinegar	...	...	...	...	1	...
1	Virol	...	...	...	...	...	...

SAMPLES TAKEN FOR CHEMICAL ANALYSIS—CONTINUED.

No. of Samples purchased.	Description of Samples.	Adulterated.	Informations.
3	Whisky, Irish ... ..	...	...
3	„ Scotch ... ..	...	...
1	Wine, Unfermented... ..	1	...
5	Yeast ... ..	...	...
7	Zinc Ointment	4	3
Total <u>1787</u>	1902	183 <i>Adulterated.</i>	106
1889	preceding year.	154 preceding year.	108

							<u>1901.</u>	<u>1902.</u>
Number of Informations	...	...	...	...	...	...	108	106
„ Fined	...	...	...	...	...	...	103	93
Acquitted or Withdrawn	...	...	...	...	...	...	5	15
Amount of Fines and Costs							£333 10 2	£363 15 0

DETAILS OF SAMPLES OF MILK OBTAINED FOR CHEMICAL ANALYSIS.

	<u>1901.</u>	<u>1902.</u>
Number of Samples purchased on Week-days in Town..	454	477
„ Informations	42	60
Number of Samples taken at Railway Stations on Week-days	129	140
„ Informations	3	0
Number of Samples purchased on Sundays in Town ...	173	125
„ Informations	31	13
Number of Samples taken at Railway Stations on Sundays	108	89
„ Informations	3	1
„ Samples taken at City Hospitals	85	97
„ Informations	3	2

The amount of fines for offences under the Sale of Food and Drugs Act has slightly increased during the past twelve months as compared with the preceding twelve months, although the number of samples taken shows a slight decrease.

MARGARINE ACT.

	<u>1901.</u>	<u>1902.</u>
Number of Visits to Wholesale Dealers in Margarine	361	303
„ Visits to Shops	6335	5346
„ Samples obtained	1	2
„ „ Analysed	1	1
„ Informations	1	2
„ Fined	1	2
		<hr/>
Amount of Fines and Costs ...	£1 7s.	| £2 15s.

BACTERIOLOGICAL EXAMINATIONS AND ANALYSES.

The work of the Bacteriologist comprises:—

- (a) Examination of food stuffs of various kinds.
- (b) Regular examination of water supplied to the City.
- (c) Examinations into suspected cases of rabies, anthrax, glanders, &c.
- (d) Examination for diagnostic purposes in suspected cases of diphtheria, typhoid fever, tubercular sputum, &c.
- (e) Special investigations.

Every food-stuff and every sample of water is analysed for the presence of (1) *Bacillus coli*; (2) *Bacillus enteritidis sporogenes*.

Every sample of milk is, in addition, examined for the presence of the *Bacillus tuberculosis* by inoculation.

In every sample of water the number of bacteria present in the cubic centimetre is also noted.

To facilitate these operations special apparatus has been constructed in the laboratory, and many of the operations have been simplified by their use.

With regard to (a) the total number of samples of food-stuffs taken for bacteriological examinations during the year 1902 were as follows:—

SUMMARY.

SAMPLE.	No.	SAMPLE.	No.
Bloater Paste... ..	4	Milk Condensed	17
Bovril	6	„ Sterilized	66
Butter	14	Mussels	30
Cheese... ..	18	Oxo	4
Chicken	2	Oysters	61
Chicken and Ham	2	Periwinkles	14
Chicken, Ham and Tongue ...	5	Pork Pie	14
Chicken and Tongue... ..	2	Potted Beef	7
Cockles	30	„ Chicken	1
Cocoa	1	„ Ham	10
Corned Beef	3	Pressed Beef	2
Crab Paste	3	„ Pork	1
Crayfish	2	Roast Beef	2
Cream	9	Salmon	19
Cream Cheese	5	Sardines	17
Crushed Oats... ..	1	Sauce... ..	6
Egg Powder	1	Sausages	17
Fried Fish	4	Saveloys	4
Golden Syrup... ..	1	Shrimps	1
Green Peas	1	Soup Powder	2
Ham and Tongue	1	Strasberg Beef Paste ...	1
Herrings	1	Suet	3
Jams	19	Tomatoes	2
Jellies	14	Turkey and Tongue... ..	2
Lemon Curd	3	Treacle	1
Lemonade Powder	1	Veal and Ham	2
Lobster	6	Virol	1
Lobster Paste... ..	1	Whelks	5
Margarine	22		
Marmalade	8		
Milk	595	TOTAL	1097

A very large number of bacteriological examinations were made of suspected Tubercular, Typhoid, and Diphtheria cases, for the medical practitioners of the district. Typhoid and Diphtheria examinations amounted to 736.

<u>SUMMARY.</u>						
Waters	...	..	...	...	...	86
Typhoid	...	...	...	...	...	305
Diphtheria	...	...	...	...	...	431
Tubercular	...	...	...	...	...	3
Malaria	...	...	...	...	...	1
Rats	...	...	...	...	...	703
Miscellaneous	...	...	...	...	...	98
						<u>1627</u>

MILK ANALYSES FOR THE YEAR.

The total number of milks examined was 595. These were examined for the presence of

- 1. The *Bacillus tuberculosis*.
- 2. The *Bacillus coli*.
- 3. The *Bacillus enteritidis sporogenes*.
- 4. Other bacteria.

The *Bacillus tuberculosis* indicates that the animal from which the milk was taken was tubercular, or that the pails into which the milk was received, or the hands of the milker were infected from previous contact with a diseased cow.

The *Bacillus coli* indicates contamination with dirt, of an intestinal origin, or possibly that the cow was suffering from inflammation of the udder.

The *Bacillus enteritidis sporogenes* indicates dust or intestinal contamination.

Presence of the Tubercular Bacillus.

Of the 595 samples examined for tubercle 46 guinea pigs died before the tubercular test was completed, leaving 549 samples for the completion of the investigation. *Of this number 33 proved tubercular, 29 were found in railway borne milks, 1 in town milks, and 3 in hospital milks.*

The greater frequency of tubercle in railway borne milks has been noted in previous years. The percentage this year is 10 per cent. as compared with less than 1 per cent. in town milks. It is a very serious matter that tubercle is still so wide spread in milk. When it is remembered that one tubercular cow may be the means of infecting the milking utensils, the hands of the milker, and even the teats of the other healthy animals, regulations to deal with infected animals cannot be too stringent.

Presence of the Bacillus Enteritidis Sporogenes and the Bacillus Coli.

The Bacillus enteritidis sporogenes was found 27 times in a total of 297 railway borne samples of milk, and once in a total of 213 samples of town milk.

The Bacillus coli was present 216 times in 297 railway borne milks, and 46 times in 213 town milks.

This is an exceedingly interesting and important result, for it shows that less care is taken in handling the country milk, and therefore that contamination much more frequently occurs.

With regard to the relationship of the Bacillus coli to the Bacillus enteritidis sporogenes, it has been found that very frequently the two organisms do not occur together. The significance of this is important as throwing light upon the significance of the Bacillus enteritidis sporogenes as an index of pollution. Where the Bacillus coli and Bacillus enteritidis sporogenes occur together this would be strong evidence that the Bacillus enteritidis sporogenes was of recent intestinal origin.

TABLE SHOWING THE TOTAL NUMBER OF MILKS WHICH WERE EXAMINED DURING 1902
FOR BACILLUS COLI COMMUNIS, BACILLUS ENTERITIDIS SPOROGENES,
AND TUBERCLE BACILLI.

Month.	Rail.	Bac. Coli Com.	Bac. Ent. Spor.	Town.	Bac. Coli Com.	Bac. Ent. Spor.	Hos- pital.	Bac. Coli Com.	Bac. Ent. Spor.	Total No.	Tubercular.			Negative.		
											Rail.	Town.	Hosp'l.	Rail.	Town.	Hosp'l.
January ...	33	30	4	15	12	—	6	5	2	54	1	—	1	8	—	—
February...	13	8	—	17	7	—	6	4	—	36	3	—	—	—	2	—
March ...	22	18	3	16	4	—	5	4	—	43	—	—	—	6	1	—
April ...	20	15	—	22	6	—	4	4	—	46	6	—	—	2	1	—
May ...	29	12	—	20	—	—	7	3	—	56	1	—	—	3	2	1
June ...	29	22	—	10	—	—	11	8	—	50	2	—	1	4	1	3
July ...	20	18	—	20	3	—	15	10	—	55	1	—	1	3	1	2
August ...	29	17	—	9	4	—	6	4	—	44	2	—	—	2	—	—
September	19	17	—	21	3	—	6	6	—	46	2	—	—	—	—	—
October ...	29	18	4	22	3	—	7	3	—	58	7	1	—	—	—	—
November	22	19	16	21	3	1	7	5	—	50	4	—	—	2	—	—
December	32	22	—	20	1	—	5	3	1	57	—	—	—	1	—	1
Total...	297	216	27	213	46	1	85	59	3	595	29	1	3	31	8	7

RESULTS OF ANALYSES OF BUTTER, CREAM, STERILIZED MILKS
HUMANIZED MILKS, CHEESE AND MARGARINE.

Butter.—Fourteen samples were analysed, *Bacillus coli* was present in 4 samples, and the *Bacillus enteritidis sporogenes* was absent in all of the samples.

Creams.—Nine samples of cream were examined; *Bacillus enteritidis sporogenes* being absent in all cases, and *Bacillus coli* present in eight samples. *B. pyocaneus* in two.

Sterilized Milks.—Sixty-six samples of Sterilized Milks were examined and only 7 were found to be sterile.

Condensed Milks.—Seventeen samples were examined and the great majority were not sterile. There is no doubt that condensed milk is a most unsatisfactory product. Bacteria are usually present, and the milk, which was originally condensed, might have contained various products of the decomposition of bacteria. These products are masked subsequently by the large quantity of sugar present, but their irritant properties are not destroyed.

Cheese.—Eighteen samples were examined. *Bacillus coli* was present in 17 samples, and *Bacillus enteritidis* was absent in all the samples.

Cream Cheese.—Five samples were examined. *B. coli* was present in all of the samples, while *B. enteritidis sporogenes* was absent.

Margarine.—*Bacillus coli* was present in 13 of 22 samples of Margarine examined, while *Bacillus enteritidis* was absent in all of the samples.

Tinned Meats and Pastes.—Forty-five samples were examined, of which 31 were sterile. *Bacillus coli* was found in 3 samples of Chicken and Ham.

Preserves.—These have shown a freedom from dangerous or danger indicating bacteria. Nineteen out of the 27 samples examined were sterile. Those which are not sterile only contain a few bacteria. There is no doubt that the greatest care must be used in the boiling and subsequent distribution of the jam into the pots to ensure sterility and keeping properties.

Jellies.—Ten out of the 14 samples were found to be sterile.

Bacteria present in Shell Fish.—As in the case of milk and milk products, some kinds of shell fish are for the most part eaten uncooked; they are in consequence liable to convey infection if they become contaminated with pathogenic bacteria. Contamination may occur in the transit and storing of the shell-fish, but more especially in the collecting grounds. It is not uncommon to find that sewage has access to oyster, mussel and cockle beds. 140 samples were examined for evidence of the *Bacillus coli* and *Bacillus enteritidis sporogenes*. The *Bacillus coli* was present 104 times, the *Bacillus enteritidis* 10 times. The *Bacillus coli* was more frequently present in oysters and mussels, the *Bacillus enteritidis* in periwinkles and cockles. In the early part of the year investigations upon *Bacillus coli* were limited to ascertaining its presence in the various samples; more recently it has been tried to estimate the number of *Bacillus coli* in one cubic centimetre of oyster juice. It appears to be clear that a quantitative estimation of the *Bacillus coli* is necessary, and also that a far more thorough estimation of the distribution of the *Bacillus coli* group in sea-water is imperative.

Sausages.—As in the case of sterilized milk, condensed milk, and raw foods generally, so in the case of sausages, it is all important that the ingredients should be pure, otherwise the spice simply masks the bacterial changes, and does not destroy the ptomaines or, indeed, injurious bacteria. Seventeen samples were examined, and the *Bacillus coli* obtained in all of the samples, and the *Bacillus enteritidis sporogenes* in 2 samples.

During the year 14 samples of Pork Pie were examined. Analyses were made especially to ascertain the presence of the *Bacillus coli* and the *B. enteritidis sporogenes*, and of other pathogenic organisms.

The *Bacillus coli* was found in nine of the samples, *B. enteritidis* in one sample, and the *B. pyocaneous* in one. The presence of the *B. enteritidis*, *B. pyocaneous*, and the large number of *B. coli* shows that proper precautions are not taken in the manufacture of this article of diet.

Plague Observations and Rats.—During the year a careful watch has been kept over the rats in the ships entering the Port, and over those found in warehouses, stables, dwellings, &c. This has been done because of the well known fact that rats suffer from Plague, and that they very probably assist to spread the disease. By the systematic bacteriological examination of these rats we may be put in a position to forestall cases of Plague.

The total number of rats which were examined during the year was 703. In no case was any rat found to be infected with Plague.

RABIES.

During the year 9 dogs and 1 cat were examined for rabies, but fortunately in no case was rabies shown to be present.

Dogs' Heads.	Not Rabies.	Negative.	Putrid.
No. 84.....	1	—	—
„ 88.....	1	—	—
„ 93.....	—	—	1
„ 94.....	—	1	—
„ 96.....	—	1	—
„ 98.....	1	—	—
„ 113	1	—	—
„ 114.....	1	—	—
„ 116.....	1	—	—
Cats' Heads.			
No. 111.....	1	—	—
Total	7	2	1

The following specimens were examined for Anthrax :—

Nature of Specimen.	Total Number Received.	B. Anthracis.	
		Present in.	Absent in.
Cow's Spleen.....	15	10	5
Cow's Udder.....	2	1	1
Cow's Ear.....	1	1	—
Cow's Blood.....	1	—	1
Piece of Beef.....	1	—	1
Piece of Veal.....	1	—	1
Dust.....	3	—	3
Hay, Meal, Cake, &c.	56	—	56
Total.....	80	12	68

The following specimens were examined for Tubercle :—

Nature of Specimen.	Total Number Received.	Tubercle Bacilli.		Chronic Mastitis.
		Present in.	Absent in.	
Udders.....	5	3	1	1
Lung.....	1	1	—	—
Total.....	6	4	1	1

The following specimen was examined for Diphtheria :—

No. 112.—Swab taken from Cat. No B. Diphtheria present.

Total number of special examinations made during the year.....98
(including Rabies).

Bacteriological Analyses of cases of Typhoid and Diphtheria in the City Fever Hospitals.

During the year the Fever Hospitals have availed themselves of the facilities of the Municipal Bacteriological Department, and 740 specimens have been examined.

The following is a summary of the results :—

431 Cases of Diphtheria.
305 ,, Typhoid.
4 other examinations.

DIPHTHERIA.						
Positive ...	...	...	...	...	...	118
Negative	...	...	...	...	...	291
No Growth	...	...	...	...	...	19
Hoffman's Bacillus present in	...	...	...	...	...	3
						431
TYPHOID.						
Positive ...	...	...	...	...	...	195
Negative	...	...	...	...	...	103
Not examined	...	...	...	...	...	7
						305
Special ...	...	...	...	...	...	4
Total...						740

WATER ANALYSES.

By means of regular periodical analyses the whole of the water supply is kept under constant bacteriological supervision. This is attained by analysing the filtered water taken from the mains and cisterns, the water supplied from the wells, and the Rivington and Vyrnwy supplies. The unfiltered water is analysed by samples taken from the reservoirs and lakes, from the streams of the watersheds, and from the fissures in the wells. In this manner only is it possible to detect contamination throughout such a vast system of water supply as that of the City of Liverpool. The degree of purity of the water supplied to the City is well shown from the following figures:—

1900.—19 Bacteria present per c.c.
1901.—22 ,, ,, ,,
1902.—39 ,, ,, ,,

CLEANSING AND SCAVENGING.

CLEANSING AND SCAVENGING.

The benefit resulting from the continuance and extension of the practice of street washing was marked; the objections urged against this cleanly and salutary work have been entirely overcome. During the hot weather of last year, the extended street washing was continued; 240 streets were washed once a week, 66 streets twice a week, 15 streets three times a week, and all passages and tunnel entrances to courts are also regularly washed. The substitution of electric cars for horse cars and omnibuses has removed one of the greatest causes of street contamination. Improvements in the details of the methods of cleansing and scavenging the streets have been effected with corresponding advantages to the health and comfort of the inhabitants. Owing to the difficulties arising from bad planning of many of the streets of smaller houses, and the absence of adequate back passages, many obstacles have yet to be overcome before the collection and removal of domestic refuse can be regarded as satisfactory; but a most important advance has been made by the action of the Health Committee in giving facilities for the substitution of sanitary ashbins for the old insanitary ashpits. Down to the end of 1902, 4,538 Improved Fixed Sanitary Ashbins have been placed in properties assessed at £10 per year and under, and 7,081 in premises assessed at over £10 per year. The number of brick ashpits in the City has been reduced from 65,000 to 59,000 approximately. Special bye-laws, which have been recently sanctioned by the Local Government Board, will avert any extension of the mischief which results from defective ashpits.

At present the objectionable practice of depositing the contents of ash-pits upon the street surface, awaiting the arrival of the cart, has still occasionally to be resorted to, with the result that refuse and dust are blown about by the winds or scattered by traffic, or left where children play with them.

The improvements in the condition not only of the main streets, but side streets and back streets also, in regard to cleansing and scavenging during the past year have been further marked.

All private, domestic, and office drains are flushed by the City Engineer's staff twice a year, and there can be no question that a more frequent and very thorough flushing would be attended with great advantage.

The City Engineer has kindly supplied the following tables, which indicate the magnitude of the operations carried out by that portion of the staff under his control:—

TABLE No. 1.

NIGHT SERVICE.
 FOR EMPTYING COURT, &c., ASHPITS, AND MIDDENS.

Middens have been practically abolished in the Old City, and consequently the operations of the night service are now limited to the removal of domestic and office refuse from the neighbourhood of the Exchange, where it would be impracticable to perform the work during the business hours of the day.

In the year 1900 an Improved Street Ashbin was introduced, and to the 31st December, 1902, 2,018 of these Bins had been fixed.

Notices Received.	Total Number of Collec- tions from Ashpits, etc.	Total Number of Loads of Ashes, etc., Collected.	Depot at which Refuse was Deposited.	Average Working Staff per night.				Analysis of Work.		Average quantity removed from each Ashpit at each Collection
				Ashpit Men.	Wharf Men.	Carts.	Horses.	Loads per Man per Night.	Loads per Cart per Night.	
660	3144	3180	Chisenhale Street.	6·2	1·0	2·16	2·16	1·64	4·7	Cart Loads. 1·01

TABLE No. 2.

SERVICE FOR THE COLLECTION AND REMOVAL OF DRY ASHPIT REFUSE.

It will be observed that the number of notices received to empty ashpits is only .42 per cent. of the total collections. The number of brick ashpits within the Old City and Added Areas is approximately 59,000. From the year 1898 to the 31st December, 1902, 4,538 Improved Fixed Sanitary Ashbins have been placed in properties of £10 assessment and under, 7,081 in properties of over £10 assessment, and in premises unsuitable for fixture bins, 4,351 loose bins have been provided. During this period the number of brick ashpits has been reduced from approximately, 65,000 to 59,000. Each ashpit in the City (day and night service) was emptied on the average during the twelve months 9.3 times. From the existing 59,000 pits a total of 94,195 loads were removed, or from each pit at one time of emptying .17 of a load.

Notices Received.	Total Number of Collec- tions from Ashpits.	Loads of Dry Ashes.							Average Daily Working Staff.			Analysis of Work.		Average quantity removed from each Ashpit at each Collection	
		Total Number of Loads Removed.	Depots at which Refuse was Deposited.							Ashpit Men.	Carts and Wagons.	Horses.	Loads per Man per day.		Loads per Cart per Day.
			Chisenhale Street.	South Depot.	Rathbone Road Destructor.	Smithdown Road Destructor.	St. Domingo Destructor.	Sandhills.	Various Tips, &c.						
2,307	544,970	91,015	23,950	8,432	9,056	10,214	17,284	8,779	13,300	135.92	60.68	60.68	2.14	4.79	.167

TABLE No. 3.
SERVICE FOR THE COLLECTION AND REMOVAL OF BELL-CART ASHES.

The Bell-cart service provides for the daily removal of domestic refuse from shops, business premises, and dwelling-houses where no permanent receptacles exist for the storage of this description of refuse. This service has to be conducted within certain limited hours of the morning to suit the convenience of occupiers, and the exigencies of business.

Total Quantity of "Bell-Cart" Ashes Collected.	Depots at which Refuse was Deposited.								Average Quantity of Refuse Collected per day.
	Chisenhale Street.	Sandhills.	South Depot.	Rathbone Road Destructor.	Garston Destructor.	St. Domingo Destructor.	Smithdown Road Destructor.	Rubbish Tips, &c.	
	Loads.	Loads.	Loads.	Loads.	Loads.	Loads.	Loads.	Loads.	
27,390	14,755	3,615	2,301	1,837	69	17	2,938	1,858	26.93
									87.5

TABLE No. 4.

SERVICE FOR FLUSHING AND CLEANSING TROUGH WATER CLOSETS, &c.

The frequent flushing of trough water closets is essentially a sanitary measure, this form of closet being provided principally in the more densely-populated portions of the City.

A large number of the public urinals and trough water closets are cleansed and disinfected twice daily in the Summer months, and once daily during the remaining part of the year.

Underground Urinals.	Overground Urinals.	Trough Water Closets.	Average Working Staff per day.	
			Trough W. C. Men.	Urinal Men.
No.	No.	No.	No.	No.
23--184 Stalls	184--513 Stalls	1,703	30	15

TABLE No. 5.

SERVICE FOR THE CLEANSING OF STREETS, COURTS, AND PASSAGES, AND THE COLLECTION OF REFUSE

THEREFROM.

During the year 1902, 63,243 loads of sweepings were collected. This quantity includes a proportion of ashpit and domestic refuse deposited on the surface of streets by occupiers of abutting premises, notwithstanding that special Lay Stalls and Galvanized Bins for the reception of this description of refuse were provided.

Total Quantity of Refuse Removed.	Depôts at which Refuse was Deposited.						Average Daily Staff.				Average Number of Loads Removed Daily per Cart.
	Chisenhale Street.	Sandhills.	Waverley.	South Depot.	Destructors.	Tips.	Sweeping Machines per day.	Average Number of Men Employed per day.	Carts.	Horses.	
Loads. 63,243	Loads. 21,396	Loads. 7,682	Loads. 2,821	Loads. 7,552	Loads. 289	Loads. 23,503	7.1	460	65.1	65.1	3.1

TABLE No. 6.
CLEANSING AND REMOVAL OF REFUSE FROM STREETS, COURTS, AND PASSAGES ON SUNDAYS.

On Sunday mornings a number of the principal streets in the central parts of the City are cleansed, and, as a sanitary measure, the domestic refuse in certain districts of the City is also collected.

Street Sweepings.												
Removed.			Depots where Deposited.									
			Chisenhale Street.		Sandhills.		South Depot.		Wavertree		Tips.	
Saleable Refuse.	Unsaleable Refuse.	Total.	Saleable Refuse.	Unsaleable Refuse.	Saleable Refuse.	Unsaleable Refuse.	Saleable Refuse.	Unsaleable Refuse.	Saleable Refuse.	Unsaleable Refuse.	Saleable Refuse.	Unsaleable Refuse.
Loads.	Loads.	Loads.	Loads.	Loads.	Loads.	Loads.	Loads.	Loads.	Loads.	Loads.	No.	Horses.
1,728	2,210	3,938	1,334	910	394	458	—	605	—	—	225	36·4
Average Daily Staff.												

TABLE No. 7.
SERVICE FOR STREET WATERING.

In connection with Street Watering approximately 35 million gallons of Water were distributed during the season, in addition to which a great quantity was used for street washing under certain conditions of the weather.

Number of Days on which Carts were out during year.	Quantity of Water Distributed.		Average Daily Staff employed during the Season.		Average No. of Loads distributed Daily per Cart.
	Large Loads.	Small Loads.	Watermen.	Carts and Horses.	
Day.	Day.				
148	107,895	19,252	15·3	24·06	30·3

In addition to the figures in above table 5,750 loads of water were distributed on the drives of Newsham and Sefton Parks.

TABLE No. 8.

REMOVAL OF GARBAGE FROM ABATTOIR.

Loads Removed during year.	Where Deposited.		
	Chisenhale Street.	Sandhills.	Canning Place.
1,307	1,307	—	—

TABLE No. 9.
RETURN OF HORSE MANURE COLLECTED FROM FIRE STATIONS AND CORPORATION STABLES,
AND DELIVERIES TO CHISENHALE STREET DEPÔT.

TOTAL QUANTITY DEALT WITH DURING THE YEAR.	DEPÔTS AT WHICH MANURE WAS DEPOSITED.		
	CHISENHALE STREET.	SANDHILLS.	WAVERTREE.
Loads.	Loads.	Loads.	Loads.
1,089	967	31	91

Of the above loads 457 were collected by the Department from various Fire Stations, and the balance was received at Chisenhale Street Depôt.

TABLE No. 10.
DESPATCHES OF MANURE AND REFUSE.

DEPÔTS.	Quantity of Saleable Refuse.			Quantity of Unsaleable Refuse.							Grand Total in Tons.	Average Daily Staff.	
	Street Sweepings	Mixture.	Total.	Con-tractors	Farmers.	Depôts.	Sea.	Des-tractors.	Sundry Tips.	Total.		Foremen.	Labourers
Chisenhale St., by Flats...	Tons. 92	Tons. 3,827	Tons. 3,919	Tons. ...	Tons. 30,270	Tons. ...	Tons. ...	Tons. ...	Tons. ...	Tons. 30,270	34,189	1	19.5
Sandhills by Rail ...	94	...	94	...	10,227	...	...	...	...	10,227	10,321		
Wavertree do. ...	2,913	...	2,913	...	...	...	...	...	...	...	2,913	...	1.5
Chisenhale Street and Sandhills, <i>via</i> Stanley D'k	...	...	...	...	...	...	2,003	...	...	...	64,485	...	2.2
per "Alpha" .....	...	...	...	...	...	...	47,160	...	...	...
per "Beta" .....	...	...	...	...	...	...	15,322	...	...	...
Clinker " .....	...	...	...	...	...	...	...	...	...	...	29,040	...	21.
South Dépôt—	...	...	...	...	...	...	28,812	...	...	...
per "Alpha" .....	...	...	...	...	...	...	228	...	...	...
per "Beta" .....	...	...	...	...	...	...	...	...	...	...	53,731	...	...
Charters Street Destructor.	...	...	...	...	...	...	...	53,731	...	...	15,003	...	...
Rathbone Road "	...	...	...	...	...	...	...	15,003	...	...	21,559	...	...
Smithdown Road "	...	...	...	...	...	...	...	21,559	...	...	33,908	...	...
St. Domingo "	...	...	...	...	...	...	...	33,908	...	...	541	...	...
Garston "	...	...	...	...	...	...	...	541	...	541	53,228	...	4.
Sundry Tips.....	186	...	186	...	...	...	...	...	53,042	53,042	311,806	1	48.2
	3,285	3,827	7,112	...	40,497	...	93,525	124,742	53,042	311,806	318,918	1	48.2

The foregoing Table shows that not less than 318,918 tons of Town's refuse have been disposed of, and this large total does not represent the actual quantity collected and carted to the Wharves, as during the Winter months a proportion of the street sweepings is in a liquefied condition, and drains away before despatch of the refuse from the Wharves.

TABLE No. 11.

HORSES.

DAILY AVERAGE NUMBER EMPLOYED ON THE WORK OF THE CLEANSING DEPARTMENT.

Night Ashes.	2.15	Dry Ashes.	61.82	Bell Ashes.	27.6	Street Cleansing.	66.47	Sweeping Machines.	6.87	Wharves.	.38	Markets.	1.9	Watering.	11.9	Abattoir.	1.05	Canals.	1.9	Destructors.	2.69	Various.	7.1	Total Daily Average.	191.83
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TABLE No. 12.
AVERAGE DAILY STAFF OF MEN EMPLOYED.

[illegible]

Out of the total of 759 men daily employed, 30 men are engaged cleansing trough closets, 51 men at the various wharves, and 31 men on the steam hopper and canal barges.

INSANITARY PROPERTY.

INSANITARY PROPERTY.

The year 1902 was occupied in dealing with two series of insanitary property, viz.: (1) the property which had been reported on 21st May, 1901, as insanitary under the Liverpool Sanitary Amendment Act, 1864, and which constituted the 17th Presentment to the Grand Jury, dated the 17th July, 1901, comprising 369 houses, and (2) the two areas reported on the 19th July, 1901, under the Housing of the Working Classes Act, 1890. These two latter areas are the Hornby Street and the Mann Street areas. The first named is in the north part of the City and is approximately bounded, on the north side by Tatlock Street and Tenterden Street, on the south by Green Street, on the east by Scotland Road, and on the west by the lower ends of Hornby Street and Tatlock Street. The Mann Street area is in the south side of the City, being part of Upper Mann Street together with the houses fronting Northumberland Street. The Hornby Street area consisted of 534 houses and premises, with a population of 2,508, and the Mann Street of 175 houses and premises, with a population of 743.

There was no further Presentment, but during the year the Medical Officer certified that the following premises were unfit for human habitation and ought to be demolished; these properties were purchased by the Housing Committee and demolished:—

The court known as No. 4 court in WAKEFIELD STREET, in the City of Liverpool.

The dwelling-houses numbered 4 and 6 in the said No. 4 court.

The court known as No. 3 court in TORBOCK STREET, in the said City.

The dwelling-houses numbered 2 and 3 in the said No. 3 court.

Re-building of houses suitable for the accommodation of displaced tenants has proceeded with activity. The following description is given by the Deputy Surveyor of the dwellings erected during the year:—

KEMPSTON STREET DWELLINGS.

(INCLUDING GILDART STREET AND CONSTANCE STREET.)

Erected under the “Housing of the Working Classes Act, 1890, Pt. III.”

These dwellings, numbering 79 in all, are reserved for the housing of persons dispossessed by the Corporation. There are four blocks, and the disposition of the tenements is as under, viz.:—

11	Four-roomed	tenements,
30	Three	„ „
38	Two	„ „

The average sizes of the rooms are as follow, viz.:—

Four-roomed tenements, living room, 14ft. by 13ft., one bedroom, 12ft. 8in. by 12ft., another bedroom, 12ft. 10in. by 9ft., and a third bedroom, 13ft. by 8ft. 9in., each bedroom also having a recess about 3ft. 6in. by 2ft. 4in. In the three-roomed tenements, the living room averages 13ft. 10in. by 12ft. 6in., one bedroom, 12ft. by 10ft. 4in., and another bedroom, 11ft. 4in. by 9ft., while in the two-roomed tenements, the living rooms are 14ft. 5in. by 12ft. 9in., and bedrooms 12ft. 5in. by 9ft. 2in.

In the tenements on the ground and first floors the rooms have a clear height of 9ft. 2in., while on the second floor, the height is 10ft. 6in.

Gas is laid on and supplied, if required, to each tenement through automatic meter.

The cost is as under, viz.:—

Land (3,810 square yards) (*annual payment of £122 10s.
to Estate Committee*).

Buildings (Estimated)	£17,285
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The rents are as under, viz. :—

GROUND FLOOR.

29	Three-roomed tenements	@ 5s. 0d. per week, each.
1	„ „ tenement (<i>Occupied by Caretaker</i>)				@ 1d. „
(Each of these tenements has separate scullery, yard, and w.c.)					

FIRST AND SECOND FLOORS.

11	Four-roomed tenements	...	...	...	@ 6s. 0d. per week, each.
30	Two „ „	...	...	...	„ 3s. 3d. „ „
(Each of these tenements has separate scullery and w.c.)					
8	Two „ „	...	...	...	„ 3s. 6d. „ „
Total number of rooms, 210.					

Total gross rental, per week	...	£16 16s. 7d.
„ „ „ per annum	...	£875 2s. 4d.

FONTENOY STREET DWELLINGS

Erected under the “Housing of the Working Classes Act, 1890, Part III.”

These dwellings (which are reserved for persons dispossessed by the Corporation) are comprised in one block, four storeys high, containing eight four-roomed and eight two-roomed tenements, or 16 in all.

The sizes of the rooms in the four-roomed tenements are as follow, viz. :—Living room, 14ft. by 12ft. 3in., one bedroom, 11ft. by 9ft., another bedroom 12ft. 3in. by 7ft. 9in., third bedroom, 9ft. by 7ft. 9in., while in the two-roomed tenements the living room measures 12ft. 3in. by 11ft. 6in., and the bedroom 12ft. 3in. by 9ft. 6in.

The height of the rooms is 8ft. 10in. in the clear.

Each living room contains a sink and a food locker, ventilated from the outer air.

A separate w.c. is also provided to each tenement.

Gas is laid on to each tenement and supplied by means of automatic meters.

The cost is as under, viz. :—

Land 560 square yards @ 12/- (valued for housing purposes)	£336 0 0
Buildings	3,081 14 0
	<hr/>
	£3,417 14 0
	<hr/>

The rentals are as follow, viz. :—

GROUND FLOOR.

2 Four-roomed tenements @ 6s. 0d. per week, each.	
2 Two „ „ „ „ „ „ „ 4s. 0d. „ „	

FIRST FLOOR.

2 Four-roomed tenements @ 6s. 0d. per week, each.	
2 Two „ „ „ „ „ „ „ 3s. 9d. „ „	

SECOND FLOOR.

2 Four-roomed tenements @ 5s. 6d. per week, each.	
2 Two „ „ „ „ „ „ „ 3s. 6d. „ „	

THIRD FLOOR

2 Four-roomed tenements @ 5s. 0d. per week, each.	
2 Two „ „ „ „ „ „ „ 3s. 3d. „ „	

Total number of rooms, 48.

<u>Total gross rental, per week ...</u>	<u>£3 14s. 0d.</u>
<u>„ „ „ per annum ...</u>	<u>£192 8s. 0d.</u>

KEW STREET DWELLINGS

(Including Newsham Street).

Site acquired under "The Liverpool Sanitary Amendment Act, 1864," and Dwellings Erected under "The Housing of the Working Classes Act, 1890, Part III)."

These dwellings (which are reserved for persons dispossessed from insanitary houses, &c.) are comprised in three blocks, each three stories high, containing 114 tenements, inclusive of Caretaker's quarters, the details of these being as follows:—

69 two-roomed tenements.

36 three-roomed tenements.

9 four-roomed tenements.

Total number of rooms, 282.

In the Newsham Street block the whole of the tenements (51) are of two rooms, the remainder of such tenements being on the third floor of the Kew Street (South) block.

The Kew Street (North) block is comprised entirely of three-roomed tenements, and the remainder of the three-roomed tenements are situate on the ground floor of the Kew Street (South) block.

The four-roomed tenements are placed on the first floor, Kew Street (South) block.

Each tenement of two and three rooms on the ground floor has separate scullery, yard, and w.c., while the four-roomed tenements are provided with separate sculleries, w.c.'s., and coal places; the two-roomed tenements on the first and second floors having separate w.c.'s., and all tenements on the first and second floors having the use (in common) of the flats opening from the balconies, as yards.

Gas is laid on to each tenement and supplied, if required, by means of automatic meters.

Food Lockers and accommodation for storage of fuel is also provided in each tenement.

The average sizes of the respective rooms are as follows :—

4-roomed tenements, (first floor)	Living room...	...	12ft. 3in. by 10ft. 0in.
	1 Bedroom	...	11ft. 6in. ,, 9ft. 6in.
	2 ,,	...	10ft. 0in. ,, 9ft. 3in.
	3 ,,	...	12ft. 3in. ,, 7ft. 0in.
3-roomed tenements, (ground floor)	Living room...	...	13ft. 6in. ,, 10ft. 6in.
	1 Bedroom	...	13ft. 0in. ,, 10ft. 0in.
	2 ,,	...	13ft. 6in. ,, 7ft. 6in.
3-roomed tenements, (1st & 2nd floors)	Living room...	...	13ft. 6in. ,, 10ft. 6in.
	1 Bedroom	...	13ft. 0in. ,, 10ft. 0in.
	2 ,,	...	13ft. 6in. ,, 7ft. 6in.
2-roomed tenements, (ground floor) (1st & 2nd floors)	Living room...	...	14ft. 6in. ,, 10ft. 3in.
	Bedroom	...	10ft. 3in. ,, 9ft. 9in.

On the ground and first floors the rooms have a clear height of 8 feet while in those on the second floor the height is greater, viz., 9 feet 6 inches owing to being partly in the roof.

The estimated cost is as under, viz. :—

Land (3,897 sq. yards at 12s. 0d. per yard)	...	£2,338	4	0
Buildings	... ..	£20,000	0	0
		<hr/>		
		£22,338	4	0
		<hr/>		

The rents of the respective tenements, are as follows, viz. :—

GROUND FLOOR.

19	Three-roomed tenements	...	...	@ 5s. 0d. per week.
1	,, ,, ,,		Caretaker's house	1d. per week (nominal).
17	Two	,,	...	4s. 0d. per week.

FIRST FLOOR.

9 Four-roomed tenements	...	...	...	...	6s. 0d. per week,
8 Three-roomed „	...	...	...	...	4s. 6d. „
17 Two-roomed „	...	...	...	...	3s. 0d. „

SECOND FLOOR.

8 Three-roomed tenements	4s. 0d. per week.
35 Two-roomed „	2s. 9d. „

Total gross rental per week	...	£21	12	4
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„ „ „ per annum	...	£1,124	1	4
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In addition to the dwellings enumerated in the foregoing statement there are in course of erection in

<u>Adlington Street area</u>	...	...	...	...	255 dwellings.
<u>Gildart's Gardens</u>	...	...	...	...	141 „
<u>Arley Street</u>	...	...	...	...	8 „
<u>Upper Stanhope Street</u>	...	...	...	...	60 „
<u>Mill Street</u>	...	...	...	...	55 „

Plans have been also approved by the City Council, and the sanction of the Local Government Board given to the erection in

<u>Clive Street and Shelley Street</u>	...	...	90 „
<u>Hornby Street area</u>	...	...	451 „
<u>Upper Mann Street area</u>	...	...	108 „
<u>Eldon Street</u>	...	...	12 „

It will thus be seen that the number of dwellings					
already built is	...	...	...	...	1013 „
while those in course of erection, and contemplated,					
number	...	...	...	...	1180 „
Making an aggregate of	...	...	...	2,193	
with 20 shops.					

HORNBY STREET AREA.

Owing to an outbreak of Typhus fever in Hornby Street, the Local Government Board sent a request for an account of the outbreak. The following report briefly gives the circumstances of the outbreak.

This disease had been lingering in Hornby Street and its vicinity for some months. As early as April 15th of this year, a case was reported at No. 6 in 42 Hornby Street, and on the 31st May four other cases were reported at the next house, viz., 4 in 42, Hornby Street.

In June sixteen cases occurred, of which six were found by the staff of the Health Committee, and ten were reported by medical men. These cases were either in Hornby Street, or traceable to infection from Hornby Street.

In July seven cases were found by the staff of the Health Committee and three cases reported by medical men. Four of the total for this month were in Hornby Street.

In August eight cases were found by the staff in Hornby Street, and three cases were reported by medical men in neighbouring streets.

In September ten cases were found by the staff in Hornby Street, one case was reported by a medical man in Hornby Street, and four cases were reported in adjacent streets.

In October thirty-one cases were found, eighteen of them by members of the staff, sixteen of these being in Hornby Street, and two in adjacent streets.

Up to the 18th November, sixteen cases had been reported, eleven of the sixteen were discovered by the staff, four of these came from Hornby Street, and four from a court in Virgil Street, from which a case had been removed during the preceding month. The remainder came from adjacent streets.

In almost all cases connections between the infected parties had been established, and in every instance the patient was removed to hospital. A small number of contacts and doubtful cases were also removed.

Although this localised outbreak presents no new feature, it may be well to point to one or two circumstances in connection with it. One is the very large proportion of sick persons discovered at an early stage

by the staff. This is owing to the system established a few years ago of daily house-to-house visitation of the infected area. In all cases a special Inspector re-visits the house from whence the patient was removed to ascertain whether any further sickness has developed. These inquiries are made daily for fourteen days, and at intervals of a day or two during the following fortnight, and any case of sickness, however trifling it may appear to be, is at once reported and visited by a medical man.

Friends of the patient, and others who are known to have been directly or indirectly in contact with him, are also visited at their homes. By these inquiries persons who may be incubating the disease are discovered and removed to the hospital at the earliest possible stage, and often before any serious risk of infection has arisen. Without these inquiries, which have occasioned no inconvenience to anyone, the patients would have remained at home for a longer period, constituting centres of infection to the neighbourhood, and it is largely to systematic inquiry and supervision, and the promptness of action taken upon available information, that the City owes the continued immunity from formidable kinds of infectious disease. The absence of friction indicates the care and intelligence exercised by the inspectors in carrying out this system.

Rigorous disinfection and cleansing, and stripping off the infected wall paper, was carried out in all instances. When bedding and clothing was destroyed, it was replaced with new bedding and clothing as it is found that money given in compensation is at once spent in drink.

Hornby Street and its vicinity is a district in which the presence of Typhus may be looked for as a natural outcome of the condition of the locality and habits of the people. Although by no means amongst the oldest parts of the City, it is one of the most insanitary, and claims an immense amount of time and attention from the sanitary staff. The general death-rate over the Hornby Street area, for the last three years, exceeds 40 per thousand, and this is largely made up by deaths amongst the neglected offspring of intemperate parents.

The Hornby Street area was reported upon by the Medical Officer in July, 1901, as an insanitary area under the Housing of the Working Classes Act, and there are not many areas in the City to which the terms employed in the official representation are more accurately descriptive:—

“The narrowness, closeness and bad arrangements and bad condition of the streets and houses, and groups of houses the want of light, air, ventilation, and proper conveniences are dangerous or injurious to the health of the inhabitants.” The area will no doubt in due course be dealt with in accordance with the methods prescribed by the Housing of the Working Classes Act.

It will not be overlooked that the only changes which have taken place in this locality during the last generation, or indeed since the construction of the property, have been administrative changes. The structure is the same except for the incidental dilapidations, which of course have deteriorated it. The habits of the people are the same and the diseases are the same, and it is only by watchfulness that these diseases are amenable to any check.

To turn to an entirely different aspect of the question, which at the present time is engaging the attention both of the Local Government Board and of the Liverpool Corporation, the incident furnishes a convenient opportunity to once more emphasise the importance of proceeding without delay with the completion of the scheme already adopted for the provision of hospital accommodation for the City. In the face of this localised outbreak of Typhus, anxieties were enormously added to by the fact that only 20 beds were allocated for this formidable disease, and it was only by taking away wards allocated to other forms of disease that accommodation could be found for the sick. Typhus fever is, under certain conditions, peculiarly infective, and it was imperative to adopt the course stated.

The position of Liverpool in regard to Typhus fever is exceptional. This disease has in former years given rise to the most destructive epidemics, in which all classes of the community have suffered, in fact it appears probable that there were wide areas in the City in which every person had at one time or another suffered from it. It is quite true that under modern administrative methods the disease has practically disappeared, and compared with outbreaks of only a few years back, this re-appearance of Typhus is trifling, nevertheless, it does point a most serious warning, and it is most significant that once again it should have seized upon one of the localities of Liverpool to which only one remedy is applicable, that is, demolition and re-construction of the area.

The Corporation Surveyor has kindly supplied the following table :—

INSANITARY PROPERTY.

INSANITARY PROPERTY PURCHASED, 1902—

Number of houses included in 17th Presentment	...	...	346
Number of houses purchased by Housing Committee included in Reports referred by Council to Committee	...	...	4
			<hr/>
Total	...	...	<u>350</u>

INSANITARY PROPERTY DEMOLISHED, 1902—

Number of houses included in 17th Presentment	...	...	341
Number of houses demolished by Housing Committee included in Reports referred by Council to Committee	...	...	4
			<hr/>
Total	...	...	<u>345</u>

HOUSING OF THE WORKING CLASSES ACT, 1890.

Number of houses purchased under Liverpool (Hornby Street and Upper Mann Street) Improvement Scheme, 1902	184
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HOUSING OF THE WORKING CLASSES ACT, 1890.

Number of notices served during the year on owners to cease to let insanitary houses	8
Number of notices served on occupiers to cease to occupy insanitary houses	7

CITY HOSPITALS.

HOSPITAL ACCOMMODATION.

A brief history of the provision of hospital accommodation was given in last year's Report, and may be again referred to here.

It is now some 16 or 17 years since the necessity for the provision by the City Council of adequate hospital accommodation came into prominence. At that time, however, in Liverpool as elsewhere, public opinion was somewhat unformed, owing to the absence of any experience of the advantages resulting from hospitals, other than workhouse hospitals, for the treatment of infectious sickness, and there was then but little public support in promoting the work; indeed there was a general reluctance, more especially on the part of those who were least able to isolate or nurse the infected sick at home, to allowing the patients to be removed to hospital. However, as more beds became available and the advantages of hospital treatment became apparent, not only in promoting recovery, but what is of even greater importance, in checking the extension of disease, the public soon began to realise the advantages of these institutions, and at the present time seek as a favour or demand as a right that means shall be provided by which persons may be taken care of when suffering from infectious sickness.

Prior to 1883 the workhouses were the only places in Liverpool to which patients could be taken, excepting a small paying institution in Netherfield Road. In 1883 the Netherfield Road Hospital was taken over by the Corporation, and in later years was extended to accommodate three times the number of patients contemplated in its original construction.

In 1884 a site at Parkhill was rented from the Dock Board, and upon it erections were constructed to accommodate 150 patients. During the same year the Grafton Street Hospital was provided, a small but model institution of its kind, containing 88 beds. From time to time additions were made at Parkhill, the most recent having been made during 1901.

From time to time during many years the question of providing a suitable site for a permanent hospital has been considered by the City Council. In 1898 such a site came into the market, the Harbreck Estate at Fazakerley being then offered for sale. This site, comprising 120 acres, was purchased with the sanction of the Local Government Board in 1898, the objects of its purchase being the provision of one hospital containing 160 beds for smallpox, and a permanent hospital to contain some 350 beds for the other forms of infectious disease. This scheme, forecasted in 1898, received the approval of the Local Government Board. The smallpox section has been completed, and plans for the larger and more important section approved by the Local Government Board, and sanction granted for the borrowing of the money.

The City boundaries had been extended in 1895, but some of the incorporated districts had already taken steps towards meeting the requirements for the isolation of the infected sick; but upon incorporation it was found necessary largely to extend the small hospital at Mill Lane, which now has accommodation for 140 patients, and an adequate administrative section.

The outbreak of smallpox led to serious inconvenience in providing accommodation in hospital for other forms of infectious sickness, as a large number of beds were set aside for smallpox, though fortunately there was at all times a very liberal margin of accommodation available.

Arrangements were made with the managers of the general hospitals by which a certain number of cases of typhoid fever were isolated in wards connected with the various hospitals. Had not this course been adopted there is no doubt that considerable extension of this serious form of disease would have followed.

Two temporary pavilions at Parkhill, which had been erected in 1884, were replaced with new structures.

The number of beds available at the beginning of the year was 727, and the number available at the end of the year was 925, showing a net gain of 198 beds.

When the scheme of hospital accommodation for the City, which has already been decided upon, has been completed, great advantages to the inhabitants will accrue. At the present time the number of beds available is as follows:—

City Hospital North	...	...	...	147	beds
„ South	...	...	...	88	„
„ East	...	...	...	140	„
„ Parkhill	...	...	...	350	„
„ Priory Road	...	...	...	40	„
„ Fazakerley	...	...	...	160	„
				<hr/>	
				925	„
				<hr/>	

The approximate apportionment of beds is as follows, but the arrangement is modified as circumstances necessitate:—

Smallpox	...	...	...	...	160	beds
Typhus Fever	...	...	...	...	40	„
Typhoid Fever	...	...	...	...	140	„
Scarlet Fever	...	...	...	...	463	„
Diphtheria	...	...	...	...	62	„
Isolation	...	...	...	...	60	„
					<hr/>	
					925	„
					<hr/>	

INFECTIOUS DISEASE.

The following table shows the number and nature of cases of Infectious Disease coming under the notice of the Medical Officer of Health during 1902, including those reported under the Notification Act.

YEAR—1902.	FEVER.				Small Pox.	Scarlatina.	Measles.	Diphtheria.	Membranous Group.	Puerperal Fever.	Erysipelas.	Chicken-pox.	TOTAL.
	Typhus.	Typhoid.	Simple.	Relapsing.									
January	2	99	...	1	17	517	60	85	8	6	97	...	892
February ...	2	80	...	...	45	392	109	81	5	6	71	...	791
March.....	1	57	3	...	55	405	167	79	2	3	85	...	857
April	3	63	1	...	21	481	161	86	6	9	77	11	919
May.....	5	83	1	...	13	467	313	87	3	6	110	40	1,128
June	16	64	...	...	10	489	546	81	6	3	63	51	1,329
July	10	83	2	...	23	341	56	51	6	4	69	120	765
August	11	82	1	...	47	429	228	59	2	7	85	69	1,020
September...	15	113	1	...	15	593	658	78	3	6	78	66	1,626
October	31	124	1	...	33	657	1,917	140	4	3	104	97	3,111
November ...	30	112	4	...	75	571	1,871	101	3	10	108	177	3,062
December ...	29	66	...	...	206	572	1,055	120	6	7	90	151	2,302
TOTAL.....	155	1,026	14	1	560	5,914	7,141	1,048	54	70	1,037	782	17,802
Removed to hospital	155	670	4	1	559	2,994	177	510	6	22	263	92	5,453

The number of patients removed to hospital includes those taken to general hospitals, as well as those taken to the City Hospitals. (See page 131).

THE INFECTIOUS DISEASE (NOTIFICATION) ACT.

The numbers of notifications received by the Medical Officer under the above Act, during the past five years, were as follows :—

	<u>1898.</u>	<u>1899.</u>	<u>1900.</u>	<u>1901.</u>	<u>1902.</u>
January	445	617	464	482	828
February	363	475	344	355	707
March	407	459	364	360	690
April	397	446	382	304	813
May	451	471	436	435	837
June	389	495	369	477	791
July	347	414	322	459	727
August	383	348	313	507	779
September	458	482	456	713	1,016
October	578	562	573	905	1,210
November	588	513	519	820	1,093
December	564	460	525	841	1,220
	<u>5,370</u>	<u>5,742</u>	<u>5,067</u>	<u>6,658</u>	<u>10,711</u>

The diseases were specified as follows :—

	<u>1898.</u>	<u>1899.</u>	<u>1900.</u>	<u>1901.</u>	<u>1902.</u>
Smallpox	16	17	167	26	429
Chickenpox	—	—	—	—	883
Scarlet Fever	2,422	2,451	2,008	3,376	5,885
Typhoid Fever	955	1,064	828	1,016	1,069
Typhus Fever	96	52	27	66	104
Continued Fever.	62	84	54	33	52
Remittent Fever..	—	—	—	1	—
Relapsing Fever	2	—	2	—	2
Fever	14	19	2	1	2
Puerperal Fever..	47	57	54	73	79
Diphtheria	527	798	710	872	1,052
Membranous Croup.	62	53	51	61	65
Erysipelas	1,167	1,145	1,163	1,132	1,086
Anthrax	—	2	—	—	2
Choleraic Diarrhœa—	—	—	1	—	1
	<u>5,370</u>	<u>5,742</u>	<u>5,067</u>	<u>6,658</u>	<u>10,711</u>

NUMBER OF CASES REPORTED AND NUMBER REMOVED TO HOSPITALS, 1889-1902.

	SMALLPOX.		SCARLET FEVER.		TYPHOID.		TYPHUS.		MEASLES	
	Number Reported.	Number Removed.	Number Reported.	Number Removed.	Number Reported.	Number Removed.	Number Reported.	Number Removed.	Number Reported.	Number Removed.
1889 ..	9	8	1,832	533	670	302	158	124	3,175	104
1890 ..	2	2	3,520	938	506	296	103	87	4,013	152
1891 ..	21	21	1,176	448	588	350	175	156	2,262	160
1892 ..	177	177	1,554	603	699	345	73	70	3,376	150
1893 ..	75	73	3,538	1,380	1,396	728	183	168	2,316	94
1894 ..	229	226	3,963	1,415	1,350	745	325	312	2,494	122
1895 ..	130	127	2,710	1,039	1,306	662	162	158	3,462	93
1896 ..	8	8	3,584	1,589	1,063	539	305	298	2,930	138
1897 ..	6	6	3,001	1,641	991	559	158	156	4,389	94
1898 ..	17	16	2,424	1,467	863	585	92	84	2,458	105
1899 ..	10	10	2,416	1,537	988	668	70	64	5,107	140
1900 ..	156	154	1,968	1,198	731	450	42	41	2,372	108
'901	37	37	3,310	1,814	864	567	55	54	6,766	185
1902 ...	560	559	5,914	2,994	1,026	670	155	155	7,141	177

The following tables, prepared by the Medical Staff of each Hospital, show the number of patients, the nature of the illness, and the results, at each of the six City Hospitals during the year 1902:—

CITY HOSPITAL NORTH, NETHERFIELD ROAD.

Visiting Physician, Dr. R. I. RICHARDSON.

Resident Physician, Dr. LAUDER THOMSON.

DISEASES.	Remaining Dec. 31st, 1901.	Admitted during 1902.	Transferred from other City Hospitals.	Total under Treatment, 1902.	Transferred to Convalescent Hospital.	Transferred to other City Hospitals.	Discharged Cured.	Remaining Dec. 31st, 1902.	Died within 48 hours of Admission.	Total Deaths.	Total Mortality per cent. of Admissions.
Scarlet Fever	78	482	9	569	97	18	368	66	7	19	3·9
Enteric Fever	32	164	3	199	—	5	160	8	2	26	15·8
Typhus Fever	1	160	—	161	—	13	102	21	4	25	15·6
Diphtheria ...	—	1	—	—	—	—	—	—	1	1	100·0
Smallpox	—	3	—	3	—	3	—	—	—	—	—
Measles.....	—	6	—	6	—	6	—	—	—	—	—
Other Diseases	5	70	—	75	—	—	63	—	4	12	17·1
Totals	116	886	12	1013	97	45	693	95	18	83	9·3

SCARLET FEVER.

	AGE PERIODS.							
	Under 5	5—10	10—20	20—30	30—40	40—50	50 upwards.	Total.
No. of Cases	138	212	103	22	7	—	—	482
No. of Deaths	9	7	2	1	—	—	—	19
Percentage of Deaths	6·5	3·3	1·9	4·5	—	—	—	3·9

ENTERIC FEVER.

	AGE PERIODS.							
	Under 5	5—10	10—20	20—30	30—40	40—50	50 upwards.	Total.
No. of Cases	16	38	50	36	15	8	1	164
No. of Deaths	1	3	12	6	4	—	—	26
Percentage of Deaths	6·2	7·8	24	16·6	26·6	—	—	15·8

TYPHUS FEVER.

	AGE PERIODS.							
	Under 5	5—10	10—20	20—30	30—40	40—50	50 upwards.	Total.
No. of Cases.....	10	19	69	32	18	10	2	160
No. of Deaths	1	—	5	4	9	5	1	25
Percentage of Deaths	10	—	7·2	12·5	50	50	50	15·6

DIPHTHERIA.

	AGE PERIODS.							
	Under 5	5—10	10—20	20—30	30—40	40—50	50 upwards.	Total.
No. of Cases.....	—	—	1	—	—	—	—	1
No. of Deaths.....	—	—	1	—	—	—	—	1
Percentage of Deaths	—	—	100	—	—	—	—	100

OTHER DISEASES.

Disease.	Admitted.	Died.
Pneumonia.....	25	5
Whooping Cough	2	1
Urticaria.....	1	—
Febricula	3	—
Duodenal Catarrh.....	1	—
Bronchitis	1	—
Meningitis	3	3
Pelvic Cellulitis	1	—
Teething.....	2	—
Influenza	2	—
Simple Continued Fever.....	5	1
Erysipelas	1	—
Rickets.....	1	—
Alcoholism.....	2	—
Ptomaine Poisoning	1	—
Broncho Pneumonia.....	1	—
Tuberculosis	2	—
Gastritis	3	—
Rheumatism	1	—
Erythema	1	—
Pemphigus.....	1	—
Tubercular Meningitis.....	1	1
Infantile Scurvy.....	1	1
Pregnancy	1	—
Multiple Abscesses	1	—
Abscess in Jaw	1	—
Scarlet Fever and Measles	1	—
Unclassified.....	4	—
	<hr/> 70	<hr/> 12
	<hr/>	<hr/> =17.1 % mortality.

CITY HOSPITAL SOUTH, GRAFTON STREET.

Visiting Physician, Dr. N. E. ROBERTS.

Resident Physician, Dr. L. H. HAMILTON.

DISEASES.	Remaining Dec. 31st, 1901.	Admitted during 1902.	Transferred from other City Hospitals.	Total under Treatment, 1902.	Transferred to Convalescent Hospital.	Transferred to other City Hospitals.	Discharged Cured.	Remaining Dec. 31st, 1902.	Died within 48 hours of Admission.	Total Deaths.	Total Mortality per cent. of Admissions.
Scarlet Fever...	63	350	34	447	146	52	167	67	1	15	4.2
Enteric Fever..	13	161	—	174	—	—	136	12	—	26	16.1
Typhus Fever..	—	4	—	4	—	—	4	—	—	—	—
Measles	2	6	—	8	—	—*	4	—	—	2	33.3
Other Diseases.	7	77	—	84	—	—*	61	—	—	17	22.0
Totals.....	85	598	34	717	146	52*	372	79	1	60	10.0

* Of the Measles cases admitted, 2 were transferred to General Hospitals.

Of the other diseases admitted, 6 were transferred to General Hospitals.

SCARLET FEVER.

	AGE PERIODS.						
	Under 5	5—10	10—20	20—30	30—40	40—50	Totals.
No. of Cases	121	148	66	9	5	1	350
No. of Deaths	9	5	1	—	—	—	15
Percentage of Deaths.....	7.4	3.3	1.5	—	—	—	4.2

ENTERIC FEVER.

	AGE PERIODS.							
	Under 5	5—10	10—20	20—30	30—40	40—50	50 up- wards.	Total.
No. of Cases	8	23	47	47	24	10	2	161
No. of Deaths.....	—	—	7	11	4	3	1	26
Percentage of Deaths..	—	—	14·89	23·40	16·6	30·0	50·0	16·14

TYPHUS FEVER.

	AGE PERIODS.					
	5—10	10—20	20—30	30—40	40—50	Totals.
No. of Cases	—	4	—	—	—	4
No. of Deaths	—	—	—	—	—	—
Percentage of Deaths.....	—	—	—	—	—	—

OTHER DISEASES.

Disease.	Admitted.	Died.
Congestion of Fauces.....	4	—
Malaise	31	—
Pneumonia	19	8
Meningitis	4	4
Abscess of Liver	2	1
Dysentery and Abscess of Liver	1	1
Pertussis.....	2	1
Phthisis	1	—
Extravasation of Urine	1	—
Febricula	2	—
Orchitis	1	—
Phthisis and Appendicitis	1	1
Adenitis	1	—
Erythema	1	—
Empyema	1	—
Enteritis.....	1	1
Bronchitis	2	—
Nil	2	—
	<u>77</u>	<u>17 = 22 %</u>

CITY HOSPITAL, PARK HILL.

Visiting Physician, Dr. N. E. ROBERTS.

*Resident Physicians, { Dr. C. J. LINTON PALMER.
 { Dr. A. B. DUNNE.*

DISEASES.	Remaining Dec., 31st, 1901.	Admitted during the year.	Transferred from other City Hospitals	Total under Treat- ment, 1902	Transferred to Con- valescent Hospital	Transferred to other City Hospitals	Discharged Cured	Remaining Dec. 31st., 1902.	Died within 48 hours of Admission	Total Deaths	Total Mortality per cent of Admissions
Scarlet Fever	109	1181	117	1407	122		1081	127	3	77	6·5
Enteric Fever.....	—	4	—	4	—		2	—	—	2	50·0
Diphtheria	46	352	—	398	—		293	39	19	66	18·7
Measles	—	19	—	19	—		9	7	—	3	15·7
Other Diseases.....	—	135	2	137	—		105	12	3	20	14·8
Isolation and Observa- tion Cases.....	6	45	2	53	—		46	7	—	—	—
Totals.....	161	1736	121	2018	122		1536	192	25	168	9·6

SCARLET FEVER.

	AGE PERIODS.							
	Under 5	5-10	10-20	20-30	30-40	40-50	up- wards	Total
No. of cases.....	350	522	231	59	13	4	2	1181
No. of deaths	58	15	2	1	—	—	1	77*
Percentage of deaths.....	16·5	2·8	0·8	1·6	—	—	50·0	6·5

* Two of the fatal cases under five years were admitted during 1901.

DIPHTHERIA.

	AGE PERIODS.							Total
	Under 5	5-10	10-20	20-30	30-40	40-50	up- wards	
No. of cases.....	132	116	69	29	4	2	—	352
No. of deaths	49	14	3	—	—	—	—	66*
Percentage of deaths.....	37·1	12·0	4·3	—	—	—	—	18·7
Deaths within 48 hours	14	3	2	—	—	—	—	19

* Two of the fatal cases under 5 years were admitted during 1901.

OTHER DISEASES.

Disease	Admitted	Died
Tonsillitis.....	73	—
Croup and Pertussis.....	8	1*
Mumps	4	—
Mixed Infection	45	15
Meningitis.....	2	2
Diseases of Heart and Lungs.....	2	1
Enteritis	1	1
	—	—
	135	20 = 14·8%

* Admitted 1901.

CITY HOSPITAL EAST, MILL LANE.

Visiting Physician, DR. H. A. CLARKE.

Resident Physician, DR. J. M. CLEMENTS.

DISEASES.	Remaining Dec. 31st, 1901.	Admitted during 1902.	Transferred from other City Hospitals.	Total under Treatment 1902.	Transferred to Convalescent Hospital.	Transferred to other City Hospitals.	Discharged Cured.	Remaining Dec. 31st, 1902.	Died within 48 hours of Admission.	Total Deaths.	Total Mortality per cent. of Admissions.
Scarlet Fever...	48	850	28	926	178	—	585	115	2	48	5·6
Enteric Fever..	—	51	—	51	4	—	33	5	—	9	17·6
Typhus Fever ..	—	4	—	4	—	3	—	—	—	1	25·0
Smallpox	—	1	—	1	—	1	—	—	—	—	—
Measles	—	11	—	11	—	—	9	—	—	2	18·1
Other Diseases.	—	30	—	30	—	—	26	—	—	4	13·3
Isolation and Observation Cases.....	—	14	—	14	—	—	14	—	—	—	—
Totals.....	48	961	28	1037	182	4	667	120	2	64	6·6

SCARLET FEVER.

	AGE PERIODS.							
	Under 5	5—10	10—20	20—30	30—40	40—50	50 upwards.	Total.
No. of Cases.....	250	359	191	35	11	4	—	850
No. of Deaths.....	31	12	2	2	1	—	—	48
Percentage of deaths	12·4	3·3	1·0	5·7	9·0	—	—	5·6

ENTERIC FEVER.

	AGE PERIODS.							
	Under 5	5-10	10-20	20-30	30-40	40-50	50 up- wards	Total
No. of Cases.....	1	11	13	17	7	2	—	51
No. of Deaths.....	—	—	2	5	2	—	—	9
Percentage of Deaths.....	—	—	15·3	29·4	28·5	—	—	17·6

TYPHUS FEVER.

	AGE PERIODS.							
	Under 5	5-10	10-20	20-30	30-40	40-50	50 up- wards	Total
No. of Cases.....	—	—	1	2	1	—	—	4
No. of Deaths.....	—	—	—	—	1	—	—	1
Percentage of Deaths	—	—	—	—	100·	—	—	25·

OTHER DISEASES.

Disease.	Admitted.	Died.
Bronchitis	2	—
Tonsillitis	10	—
Dentition	2	—
Tabes Mesenterica	1	1
Anæmia	1	—
Parotitis (Mumps)	1	—
Pneumonia.....	10	—
Tubercular Meningitis.....	2	2
Puerperal Sepsis	1	1
	—	—
	30	4 = 13·3%

CITY HOSPITAL, PRIORY ROAD.

Visiting Physician, DR. R. S. ARCHER.

DISEASES.	Remaining Dec. 31st, 1901.	Admitted during 1902.	Transferred from other City Hospitals.	Total under Treatment, 1902.	Transferred to Convalescent Hospital.	Transferred to other City Hospitals.	Discharged Cured.	Remaining Dec. 31st, 1902.	Died within 48 hours of Admission.	Total Deaths.	Total Mortality per cent of Admissions.
Smallpox	6	432	5	443	147	54	177	44	—	18	4·1
Other Diseases	—	20	—	20	—	—	—	—	—	*2	10·0
Isolation and Observation Cases.....	—	161	—	161	17	82	60	2	—	—	—
TOTALS	6	613	5	624	164	136	237	46	—	20	3·2

* One of these was a case of Typhus, dying within 48 hours of admission. The other was a case of Broncho-Pneumonia.

SMALLPOX.

	AGE PERIODS.							
	Under 5	5—10	10—20	20—30	30—40	40—50	50 upwards.	Total.
No. of Cases	23	30	73	147	89	61	20	443
No. of Deaths	3	1	1	3	5	5	—	18
Percentage of Deaths ...	13·0	33·3	1·3	2·04	5·49	8·19	—	4·1

Six of the deaths were of unvaccinated persons.

OTHER DISEASES.

Disease.	Admitted.	Died.
Typhus.....	2	1
Broncho-Pneumonia.....	1	1
Bronchitis	1	—
Chickenpox	8	—
Measles	1	—
Cardiac Disease.....	1	—
Malaria	1	—
Papular Eruption.....	2	—
Pneumonia	1	—
Rheumatism	1	—
Syphilis	1	—
	20	2

CITY HOSPITAL, FAZAKERLEY.

Consulting Physician, DR. N. E. ROBERTS.

Resident Physician, DR. LAURENCE N. POLE.

Diseases.	Remaining Dec. 31st., 1901.	Admitted during the Year	Transferred from other City Hospitals	Total under Treatment, 1902	Transferred to Con- valescent Hospital	Transferred to other City Hospitals	Discharged Cured	Remaining Dec. 31st., 1902.	Died within 48 hours of Admission	Total Deaths	Total Mortality per cent. of Admissions
Scarlet Fever.....	136	127	558	685	106		570	—	—	9	7·0
Typhus Fever.....	—	—	19	19	6		13	—	—	—	—
Smallpox	—	122	56	178	12		44	120	—	1	0·8
Measles	—	2	—	2	1		1	—	—	—	—
Other Diseases.....	—	6	1	7	—		7	—	—	—	—
Isolation and Observa- tion Cases.....	—	39	86	125	—		117	8	—	—	—
Totals	136	296	720	1016	125		752	128	—	10	3·3

SCARLET FEVER.

	AGE PERIODS.							Total
	Under 5	5-10	10-20	20-30	30-40	40-50	50 up- wards	
No. of Cases.....	32	54	34	4	3	—	—	127
No. of Deaths.....	4	5	—	—	—	—	—	9
Percentage of Deaths	12·5	9·2	—	—	—	—	—	7·0

SMALLPOX.

	AGE PERIODS.							Total
	Under 5	5-10	10-20	20-30	30-40	40-50	50 upwards	
No. of Cases.....	5	8	26	30	34	12	7	122
No. of Deaths.....	—	—	—	—	1	—	—	1
Percentage of Deaths.....	—	—	—	—	2·9	—	—	0·8

OTHER DISEASES.

Disease.	Admitted.	Died.
Chicken-pox	2	—
Syphilis	2	—
Eczema	1	—
Scabies	1	—

CITY HOSPITAL, GARSTON.

Diseases.	Remaining Dec. 31st., 1901	Admitted during the Year	Transferred from other City Hospitals	Total under Treatment, 1902	Discharged Cured	Remaining Dec. 31st., 1902.	Deaths	Total Mortality per cent. of Admissions
Scarlet Fever	3	62	—	65	53	12	—	—
Chicken-pox	—	1	—	—	1	—	—	—
Totals	3	63	—	65	54	12	—	—

SCARLET FEVER.

	AGE PERIODS.							Total
	Under 5	5-10	10-20	20-30	30-40	40-50	50 upwards	
No. of Cases.....	22	26	9	5	—	—	—	62
No. of Deaths.....	—	—	—	—	—	—	—	—
Percentage of Deaths.....	—	—	—	—	—	—	—	—

APPENDIX.

The following tables I, II, III, IV, and marked also A, B, C, D, are prepared pursuant to an instruction of the Local Government Board.

TABLE I.

YEAR.	Population estimated to Middle of each year.	BIRTHS.			TOTAL DEATHS REGISTERED IN THE DISTRICT.			TOTAL DEATHS IN PUBLIC INSTITUTIONS IN THE DISTRICT.	Deaths of non-residents registered in Public Institutions in the District.	Deaths of residents registered in Public Institutions beyond the district.	NETT DEATHS AT ALL AGES BELONGING TO THE DISTRICT.	
		Number.	Rate.*	Under 1 year of age.	At all ages.		Number.				*Rate.	
					Rate per 1000 Births regist'd.	Number.						Rate.*
1	2	3	4	5	6	7	8	9	10	11	12	13
1892.....	519590	17758	34.2	3209	181	12671	24.4	2130	283	214	12602	24.2
1893.....	520882	18328	35.2	3863	210	13919	26.7	2723	427	247	13739	26.3
1894.....	522178	17893	34.3	3210	179	12073	23.1	2663	434	250	11889	22.7
+1895.....	652523	22006	33.7	4441	202	16624	25.5	3441	409	...	16215	24.8
1896.....	658050	21943	33.3	3833	175	14476	22.0	3457	416	...	14060	21.4
1897.....	663633	22280	33.6	4488	201	15590	23.5	3604	473	...	15117	22.8
1898.....	669243	22227	33.2	4111	184	15380	23.0	3812	527	...	14853	22.2
1899.....	674912	22488	33.3	4481	199	16861	25.0	4278	592	7	16276	24.1
1900.....	680628	22762	33.4	4247	186	16393	24.0	4257	616	8	15785	23.1
1901.....	686332	21980	32.0	4138	188	15493	22.5	4231	618	4	14879	21.6
Averages for years 1892-1901.	624797	20966	33.6	4002	190	14948	23.9	3459	479	73	14542	23.2
+1902.....	710337	24283	34.2	3936	162	15994	22.5	4564	602	4	15396	21.6

* Rates in Columns 4, 8, and 13 calculated per 1000 of estimated population. † City Boundaries extended. ‡ City Boundaries extended.
NOTE.—The deaths to be included in Column 7 of this Table are the whole of those registered during the year as having actually occurred within the district or division. The deaths included in Column 12 are the number in Column 7, corrected by the subtraction of the number in Column 10 and the addition of the number in Column 11.

By the term “Non-residents” is meant persons brought into the district on account of sickness or infirmity, and dying in public institutions there; and by the term “Residents” is meant persons who have been taken out of the district on account of sickness or infirmity, and have died in public institutions elsewhere.

The “Public institutions” to be taken into account for the purposes of these Tables are those into which persons are habitually received on account of sickness or infirmity, such as hospitals, workhouses and lunatic asylums.

Area of District in acres
(exclusive of area covered by water).

Total population at all ages.....702,247
Number of inhabited houses126,541
Average number of persons per house5.5

At Census of 1901

TABLE II.

NAMES OF LOCALITIES.	1.—Scotland District.					2.—Exchange District.					3.—Abercromby District.					4.—Everton District.				
	Population esti- mated to middle of each Year.	Births regis- tered.	Deaths at all Ages.	Deaths under 1 year.	Population esti- mated to middle of each Year.	Births regis- tered.	Deaths at all Ages.	Deaths under 1 year.	Population esti- mated to middle of each Year.	Births regis- tered.	Deaths at all Ages.	Deaths under 1 year.	Population esti- mated to middle of each Year.	Births regis- tered.	Deaths at all Ages.	Deaths under 1 year.	Population esti- mated to middle of each Year.	Births regis- tered.	Deaths at all Ages.	Deaths under 1 year.
YEAR.	a.	b.	c.	d.	a.	b.	c.	d.	a.	b.	c.	d.	a.	b.	c.	d.	a.	b.	c.	d.
1892.....	53626	2057	1838	445	46980	1303	1701	300	55131	1596	1266	217	111610	4074	2440	712	111610	4074	2440	712
1893.....	53553	2027	1834	471	46382	1387	1688	325	54814	1691	1384	267	112672	4105	2957	910	112672	4105	2957	910
1894.....	53481	2041	1628	452	45792	1302	1495	298	54499	1671	1102	205	113673	4233	2410	690	113673	4233	2410	690
1895.....	53409	2144	1836	506	45209	1325	1670	314	54186	1676	1381	251	114074	4287	3059	858	114074	4287	3059	858
1896.....	53336	2053	1609	417	44634	1433	1451	291	53874	1740	1127	203	114964	4335	2697	778	114964	4335	2697	778
1897.....	53264	2122	1711	475	44065	1381	1495	348	53564	1711	1216	233	116534	4441	2875	902	116534	4441	2875	902
1898.....	53192	2111	1825	460	43505	1310	1557	316	53256	1633	1242	245	117647	4304	2729	807	117647	4304	2729	807
1899.....	53121	2125	1865	509	42951	1278	1634	314	52950	1695	1258	229	118940	4328	3143	880	118940	4328	3143	880
1900.....	53049	2166	1830	521	42405	1332	1549	347	52645	1633	1303	252	120904	4442	2896	846	120904	4442	2896	846
1901.....	52934	2044	1694	455	41831	1180	1299	285	52301	1565	1099	245	121953	4216	2902	819	121953	4216	2902	819
Averages of Years 1892 to 1901.	53296	2089	1767	471	44375	1323	1554	314	53722	1661	1238	235	116297	4276	2811	820	116297	4276	2811	820
1902.....	52876	2225	1745	492	41332	1216	1432	298	52004	1757	1155	220	122964	4627	2735	731	122964	4627	2735	731

NOTE.—Population of each district corrected as per Census Returns of 1891 and 1901.

TABLE II.—*continued.*

NAMES OF LOCALITIES.	5.—Kirkdale District.				6.—West Derby (West) District.				7.—Toxteth District.			
	Population esti- mated to middle of each year.	Births regis- tered.	Deaths at all Ages.	Deaths under 1 Year.	Population esti- mated to middle of each year.	Births regis- tered.	Deaths at all Ages.	Deaths under 1 Year.	Population esti- mated to middle of each year.	Births regis- tered.	Deaths at all Ages.	Deaths under 1 year.
YEAR.	<i>a.</i>	<i>b.</i>	<i>c.</i>	<i>d.</i>	<i>a.</i>	<i>b.</i>	<i>c.</i>	<i>d.</i>	<i>a.</i>	<i>b.</i>	<i>c.</i>	<i>d.</i>
1892	66529	2340	1330	351	78124	2829	1549	423	107178	3559	2335	622
1893	66849	2479	1579	465	79059	2852	1791	566	107047	3787	2345	701
1894	67170	2308	1317	391	80005	2894	1569	412	106916	3444	2118	602
1895	67493	2411	1657	487	80207	2858	1918	536	106786	3746	2652	746
1896	67818	2359	1333	400	81311	2950	1698	486	106655	3522	2231	550
1897	68144	2423	1509	457	82434	3040	1827	557	106525	3527	2456	712
1898	68472	2377	1368	408	83670	3099	1783	538	106396	3493	2308	626
1899	68801	2361	1578	434	84907	3086	1841	566	106268	3545	2678	711
1900	69132	2408	1552	470	85924	3019	1836	507	106393	3429	2496	681
1901	69410	2292	1438	448	86882	2921	1736	522	105922	3356	2349	632
Averages of Years 1892 to 1901.	67982	2376	1466	431	82252	2955	1755	511	106608	3541	2397	658
1902	69798	2396	1494	402	87751	2986	1729	450	105636	3671	2421	630

NOTE.—Population of each district corrected as per Census Returns of 1891 and 1901.

TABLE II.—*continued.*

NAMES OF LOCALITIES.	8.—Walton District.				9.—West Derby (East) District.				10.—Wavertree District.				11.—Sefton Park District (late Toxteth Rural).			
YEAR.	Population esti- mated to middle of each Year.	Births regis- tered.	Deaths at all Ages.	Deaths under 1 year.	Population esti- mated to middle of each Year.	Births regis- tered.	Deaths at all Ages.	Deaths under 1 year.	Population esti- mated to middle of each year.	Births regis- tered.	Deaths at all Ages.	Deaths under 1 year.	Population esti- mated to middle of each year.	Births regis- tered.	Deaths at all Ages.	Deaths under 1 year.
1890.....	} Statistics not available	}	}	}	}	}	}	}	}	}	}	}	}	}	}	}
1891.....																
1892.....																
1893.....																
1894.....																
1895.....																
1896.....																
1897.....																
1898.....																
1899.....																
1900.....																
1901.....																
Averages of } Years 1895 } to 1901. }	50316	1622	795	239	41700	1060	705	162	21558	616	315	96	27404	623	323	77
1902.....	56379	1897	887	250	44872	1302	721	146	27304	962	399	118	31579	603	397	93

NOTE.—Population of each district corrected as per Census Returns of 1891 and 1901.

B—*Continued.*

TABLE II.—B continued.

NAMES OF LOCALITIES.	8.—Garston District.			
YEAR.	Population estimated to middle of each year.	Births registered.	Deaths at all Ages.	Deaths under 1 Year.
	<i>a.</i>	<i>b.</i>	<i>c.</i>	<i>d.</i>
1890.....	Statistics not available	not available		
1891.....				
1892.....				
1893.....				
1894.....				
1895.....				
1896.....				
1897.....	15733	494	247	82
1898.....	16133	485	280	91
1899.....	16544	530	268	92
1900.....	16966	544	268	91
1901.....	17398	562	340	104
Averages of Years 1897 to 1901...	16555	523	281	92
1902.....	17842	641	277	69

NOTE.—Population corrected as per Census Returns of 1891 and 1901.

TABLE III.

Cases of Infectious Disease notified during the Year 1902.

NOTIFIABLE DISEASE.	CASES NOTIFIED IN WHOLE DISTRICT.							TOTAL CASES NOTIFIED IN EACH LOCALITY.														Public Institutions (Workhouses and Hospitals).	Emigrants, Seamen, &c., passing through the City.	No. OF CASES REMOVED TO HOSPITAL FROM EACH LOCALITY.														Public Institutions (Workhouses and Hospitals).	Emigrants, Seamen, &c., passing through the City.
	At all Ages.	At Ages—Years.						Scotland.	Exchange.	Abercromby.	Everton.	Kirkdale.	West Derby (West).	Toxteth.	Walton.	West Derby (East).	Wavertree.	Sefton Park (late Toxteth Rural).	Garston.	Scotland.	Exchange.			Abercromby.	Everton.	Kirkdale.	West Derby (West).	Toxteth.	Walton.	West Derby (East).	Wavertree.	Sefton Park (late Toxteth Rural).	Garston.						
		Under 1.	1 to 5.	5 to 15.	15 to 25.	25 to 65.	65 and up- wards.																																
Small-pox	560	5	18	71	157	306	3	52	50	(w) 14	(H) 176	72	38	22	(H) 61	(H) 20	...	(w) 4	1	24	26	52	50	14	175	72	38	22	61	20	...	4	1	24	26				
Cholera .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diphtheria	1048	18	450	423	98	50*	...	54	53	66	217	66	110	143	109	52	40	82	41	11	4	34	27	43	108	34	55	82	40	28	15	24	6	10	4				
Membranous croup	54	...	40	12	2	...	...	12	1	1	10	9	3	1	10	2	1	2	2	...	...	1	...	1	2	1	...	1	...	...	...	...	...	...	...
Erysipelas	1037	14	45	86	133	695	64	109	81	71	172	67	123	194	84	34	15	29	24	30	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Scarlet fever	5914	55	1972	3395	335	157	...	466	297	253	1211	541	639	701	682	324	158	332	114	176	20	231	153	156	668	255	320	393	255	137	84	110	59	154	19				
Typhus fever.....	155	1	8	49	54	43	...	129	7	...	5	8	1	3	1	...	...	...	...	...	1	129	7	...	5	8	1	3	1	...	...	...	...	...	1
Enteric fever.....	1027	...	82	286	298	360	1	96	70	67	170	72	138	164	69	51	22	24	37	20	27	52	25	26	82	32	56	82	24	13	9	5	8	8	22				
Relapsing fever.....	1	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
Continued fever ...	14	...	1	9	2	1	1	1	1	...	1	...	1	7	...	...	...	1	2	...	...	1	1	...	...	...	3	...	...	...	...	...	...	...	...
Puerperal fever.....	70	...	...	...	23	47	...	11	4	3	8	10	11	5	6	5	3	2	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Plague			
*Chicken-pox.....	782	58	413	298	10	3	...	93	48	39	179	62	80	95	64	18	38	35	4	26	1	2	4	...	4	...	...	2	2	...	1	...	...	...	...
†Tuberculosis.....	2199	3	31	178	250	1711	26	368	268	248	462	197	233	264	87	38	23	6	—	5	—	231	213	167	369	132	134	101	54	23	13	2	—	2	—				
Totals	12861	154	3060	4807	1362	3383	95	1391	880	762	2611	1105	1377	1509	1173	544	300	517	225	294	83	733	480	407	1413	535	604	689	437	221	122	145	74	198	72				

(H) The localities in which the Isolation Hospitals are situated. There is also an Isolation Hospital at Fazakerley, outside the District.

(w) The localities in which Workhouses are situated.

* Notification compulsory since April, 1902.

† Notification voluntary since February, 1901.

TABLE IV.
Causes of, and ages at, Death during Year 1902.

CAUSES OF DEATH.	DEATHS IN OR BELONGING TO WHOLE DISTRICT AT SUBJOINED AGES.							DEATHS IN OR BELONGING TO LOCALITIES (AT ALL AGES).											TOTAL DEATHS IN PUBLIC INSTITUTIONS IN THE DISTRICT.	
	All ages.	Under 1.	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 65.	65 and upwards.	Scotland	Ex-change.	Aber-cromby.	Ever-ton.	Kirkdale	West Derby, (West).	Toxteth.	Walton.	West Derby, (East).	Waver-tree.	Sutton Park.		Garston.
Small-pox	18	2	2	1	2	11	...	...	2	...	7	4	3	1	1	...	...	...	...	19
Measles	327	62	241	24	...	...	...	44	30	27	62	29	33	71	14	7	7	2	1	30
Scarlet fever	310	15	188	90	11	6	...	33	21	11	74	42	25	42	35	9	9	6	3	181
Whooping-cough	401	161	228	12	...	...	...	43	29	26	67	47	45	73	26	23	13	7	2	35
Diphtheria and membranous croup	217	18	124	70	4	1	...	19	17	9	48	16	19	21	21	11	5	20	11	82
Croup	19	2	16	1	...	...	...	...	1	...	5	1	2	5	1	1	1	2	...	1
(Typhus	23	...	1	2	3	17	...	16	1	...	2	3	...	1	...	...	...	...	...	25
Fever - Enteric	182	1	10	36	36	99	...	13	15	16	29	17	25	32	12	9	5	5	4	110
(Other continued	2	...	1	...	...	1	...	...	...	...	...	...	...	2	...	...	...	...	...	...
Epidemic influenza	68	6	2	...	3	40	17	2	8	4	11	4	11	15	2	4	4	1	2	1
Cholera .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Plague .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diarrhoea	624	423	162	5	3	16	15	111	67	21	130	71	52	94	37	15	10	9	7	24
Enteritis	291	181	60	9	3	27	11	62	14	11	50	28	48	35	17	8	5	4	9	23
Puerperal fever.....	26	...	...	...	4	22	...	2	1	1	2	4	5	3	1	4	1	1	1	13
Erysipelas	35	5	1	2	1	19	7	2	5	4	9	3	3	4	...	1	...	4	...	20
Other septic diseases	12	1	1	2	1	7	...	...	1	1	...	1	1	1	5	...	1	...	1	8
Phthisis	1283	2	28	51	198	983	21	120	159	112	232	116	172	171	65	50	30	29	27	635
Other tubercular diseases	417	110	151	78	24	52	2	38	39	35	78	41	60	45	19	16	24	13	8	127
Cancer, malignant disease	566	...	4	3	5	405	149	37	40	59	90	46	77	100	35	36	20	17	10	261
Bronchitis	1853	444	240	27	17	655	470	273	174	156	343	190	197	284	79	79	32	30	16	408
Pneumonia	1403	287	395	70	71	480	100	146	154	100	238	125	187	256	56	56	25	35	25	287
Pleurisy	56	2	8	1	5	34	6	1	9	6	3	8	11	9	2	2	2	2	1	27
Other diseases of Respiratory organs	165	28	27	6	6	75	23	21	12	4	36	14	18	30	4	10	7	5	4	17
Alcoholism and Cirrhosis of liver...	265	...	1	2	5	243	14	22	31	32	41	18	41	36	12	15	6	6	2	117
Veneral diseases	70	53	5	...	...	10	2	13	14	4	11	5	6	9	6	1	...	...	1	37
Premature birth	459	459	...	...	...	...	...	50	23	26	87	43	54	83	35	16	18	15	9	43
Diseases and accidents of parturition	38	...	...	...	8	30	...	5	...	2	10	2	5	5	3	1	3	1	1	6
Heart diseases	1041	...	8	43	72	619	299	86	125	114	173	96	91	154	61	55	30	40	16	383
Accidents	559	131	68	46	37	233	44	95	68	40	87	55	37	109	23	19	6	11	9	305
Suicides	56	...	...	...	4	44	8	2	5	5	12	2	5	4	6	5	4	3	3	15
All other causes	4610	1506	486	211	116	1282	1059	489	364	329	799	464	497	727	309	268	131	129	104	1324
All causes	15,396	3899	2408	792	639	5411	2247	1745	1432	1155	2786	1495	1730	2422	887	721	399	397	277	4564

NOTE.—The deaths of residents occurring in Public Institutions beyond the limits of the City have been included in this table, and deaths of non-residents occurring in Public Institutions in the City have been excluded. This note does not apply to the column of deaths in Public Institutions.

E DEATHS REGISTERED IN THE CITY OF LIVERPOOL,
DURING THE YEAR ENDING SATURDAY, 27TH DECEMBER, 1902.

[illegible]

DEATHS REGISTERED IN GARSTON

During the Year Ending, Saturday, 27th December, 1902.

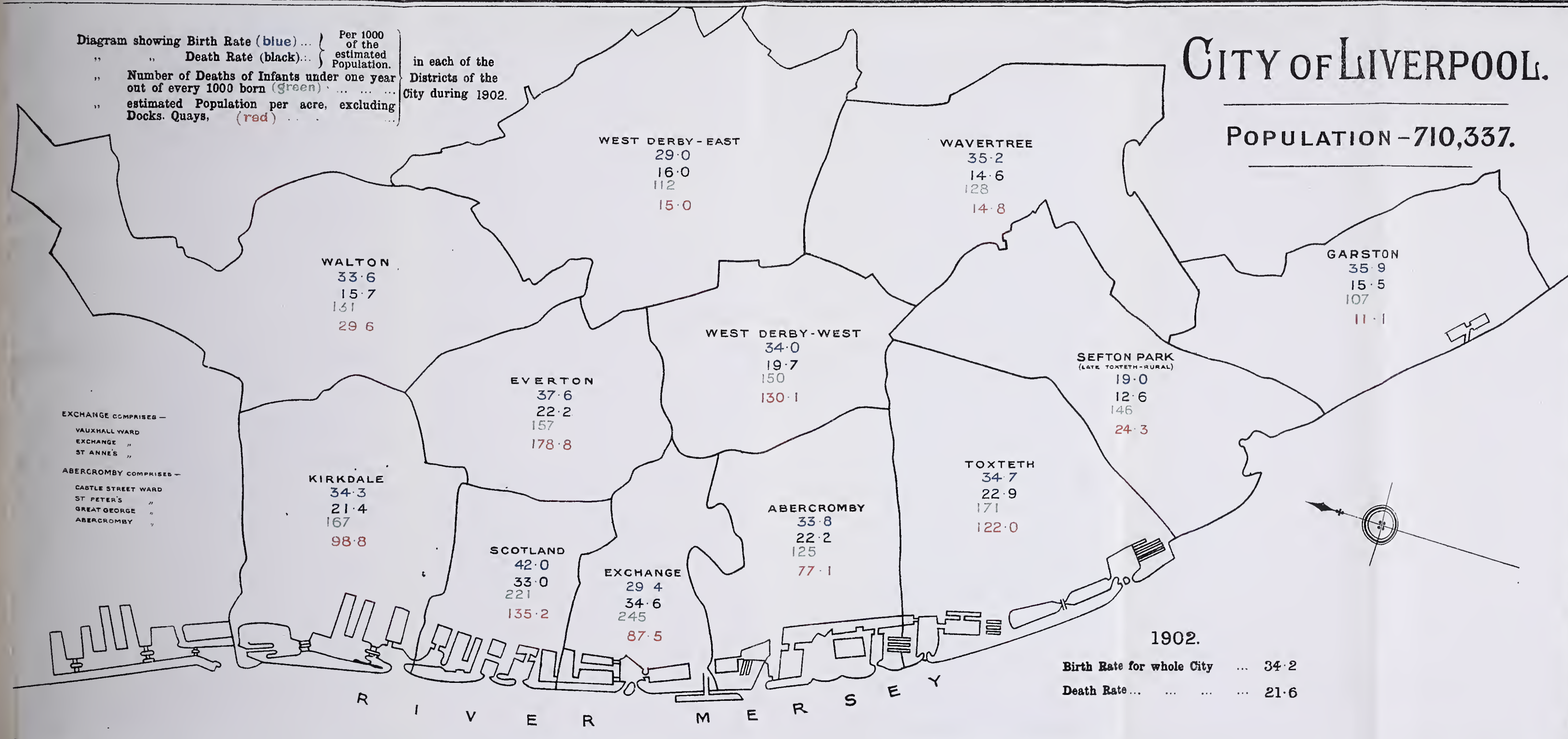
CAUSE OF DEATH.	SEX.		AGE—BELOW.																		Garston.	Accident Hospital	Total Deaths.
	Male.	Female.	1	2	3	4	5	10	15	20	25	30	40	50	60	65	70	80	90				
ALL CAUSES	126	118	68	19	6	7	4	9	5	6	6	7	15	18	26	15	9	17	7	240	4	244	
I.—Zymotic and Septic Diseases	16	16	7	5	1	6	1	6	2	...	1	1	1	...	...	...	...	...	...	32	...	32
II.—Diseases of Uncertain or Variable Seat..	4	7	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	11	...	11
III.—Tubercular Diseases	14	15	2	2	2	1	1	2	1	2	3	1	5	4	2	...	1	...	...	29	...	29
IV.—C. Institutional Diseases .....	...	3	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	3	...	3
V.—Diseases of the Nervous System	18	13	6	1	...	...	1	1	...	...	...	...	2	3	3	6	4	3	1	31	...	31
VI.—Diseases of the Circulatory System	7	8	...	...	...	...	...	1	2	...	...	...	1	2	3	2	2	1	1	15	...	15
VII.—Diseases of the Respiratory System	19	22	11	5	2	...	...	1	1	...	...	3	1	1	9	3	1	3	...	41	...	41
VIII.—Diseases of the Digestive System	10	13	13	3	1	...	...	...	...	...	...	1	1	2	1	...	...	...	...	23	...	23
IX.—Diseases of the Lymphatic System .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
X.—Diseases of the Urinary System	2	2	...	...	...	...	1	...	...	...	...	...	1	1	...	1	...	...	...	4	...	4
XI.—Diseases of the Reproductive System .....	...	2	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	2	...	2
XII.—Diseases of the Joints, &c. ....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
XIII.—Dietetic Diseases .....	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	1
XIV.—Developmental Diseases	26	15	27	1	...	...	...	...	...	...	...	...	...	...	1	...	...	7	5	41	...	41
XV.—Diseases of the Integumentary System..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
XVI.—Violence	10	1	1	1	...	...	...	...	...	...	1	...	2	4	1	1	...	...	...	7	4	11
Causes ill defined or not specified. ....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Class 1.—Measles .....	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Scarlatina .....	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	2	...	2
Whooping Cough	2	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Membranous Croup	2	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	2
Diarrhea	5	2	6	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7	...	7
Typhoid Fever	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	1
Syphilis .....	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	1
Diphtheria	4	5	...	1	1	4	...	3	...	...	...	...	...	...	...	...	...	...	...	9	...	9
Puerperal Fever .....	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	1
Rheumatic Fever .....	...	4	...	...	...	...	1	1	2	...	...	...	...	...	...	...	...	...	...	4	...	4
Influenza	2	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	2	...	2
Septicæmia .....	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Class 2.—Abscess	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Cancer	3	7	...	...	...	...	...	...	...	...	...	...	...	...	5	2	1	2	...	10	...	10
Class 3.—Tuberculosis .....	...	2	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	2	...	2
Tabes Mesenterica .....	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Phthisis	11	10	...	1	1	...	...	2	...	1	3	1	5	4	2	...	1	...	...	21	...	21
Hydrocephalus	3	2	2	1	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	5	...	5
Class 4.—Rheumatism .....	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	1
Purpura .....	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	1
Mixedema .....	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Class 5.—Inflammation of Brain, &c.	1	1	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	2	...	2
Apoplexy	8	6	...	...	...	...	...	...	...	...	...	...	...	2	3	2	4	3	...	14	...	14
Paralysis	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	1
Epilepsy .....	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Convulsions	4	3	6	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7	...	7
Other Diseases of Brain	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	2	...	2
Otitis .....	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Myelitis	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	1
Neuritis	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	1
Peripheral Neuritis	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	1
Class 6.—Disease of Heart	5	6	...	...	...	...	...	...	1	2	...	...	1	1	2	2	1	...	1	11	...	11
Valvular Disease	2	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	2	...	2
Embolism .....	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	1
Syncope .....	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	1
Class 7.—Bronchitis	6	7	2	1	1	...	...	...	...	...	...	1	...	...	4	1	1	2	...	13	...	13
Pneumonia	10	13	8	3	1	...	...	...	1	1	...	1	1	1	3	2	...	1	...	23	...	23
Asthma	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Congestion of Lungs .....	...	2	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	2
Pleurisy	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	1
Emphysema	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	1
Class 8.—Dentition	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Inflammation of Stomach	4	4	5	1	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	8	...	8
Inflammation of Bowels	4	3	6	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7	...	7
Peritonitis .....	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	1
Disease of Stomach, &c.	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Disease of Liver	1	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	2	...	2
Ileus .....	...	1	1	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	1	...	1
Hæmatemesis .....	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Gastro-Enteritis .....	...	1	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	1
Class 9.—Lymphadenoma .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Class 10.—Disease of Kidneys, &c.	2	2	...	...	...	...	1	...	...	...	...	...	1	1	...	1	...	...	...	4	...	4
Class 11.—Childbirth .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Pelvic Abscess .....	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	1
Mala Puerperis Incidentia .....	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	1
Class 12.—Disease of Bones and Joints .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Class 13.—Alcoholism .....	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Class 14.—Premature Birth	7	2	9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9	...	9
Malformation	2	2	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	...	4



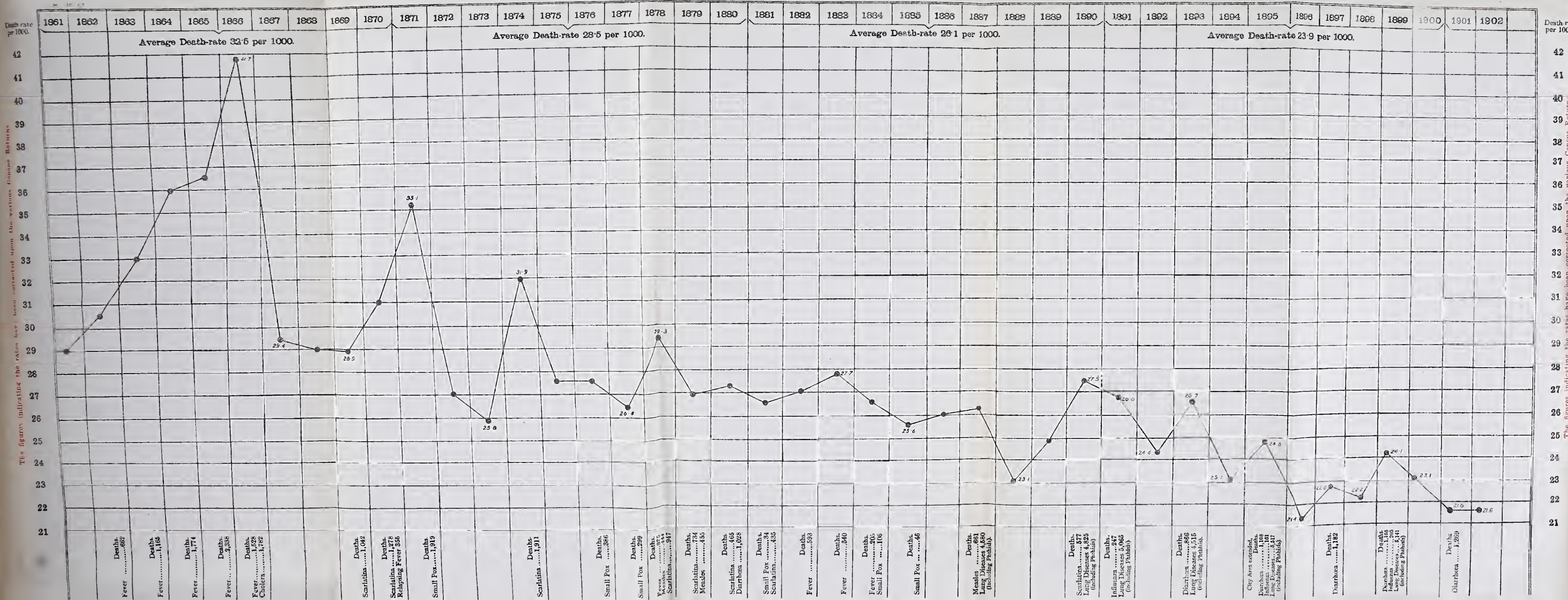
Diagram showing Birth Rate (blue) ... } Per 1000
" " Death Rate (black)... } of the
" " Number of Deaths of Infants under one year } estimated
" " out of every 1000 born (green) } Population.
" " estimated Population per acre, excluding } in each of the
" " Docks. Quays, (red) } Districts of the
" " } City during 1902.

CITY OF LIVERPOOL.

POPULATION - 710,337.



CITY OF LIVERPOOL.



The figures indicating the rates have been corrected upon the various Census Returns.

CITY OF LIVERPOOL

Area 13,236 acres (exclusive of half of River Mersey).

(NOT INCLUDING GARSTON)

SCALE OF ONE MILE.

The Map is divided into half-mile squares.



DISTRICTS.

1. SOOTLAND
2. EXCHANGE
3. ABERCROMBY
4. EVERTON
5. KIRKDALE
6. WEST DERBY—WEST
7. TOXTETH
8. WALTON
9. WEST DERBY—EAST
10. WAVERTREE
11. SEFTON PARK
(LATE TOXTETH—RURAL)

